ARMY

The First World War Battlefield Guide:

Volume 1

The Western Front

Edition 2 June 2015

The Somme Battlefield: Newfoundland Memorial Park at Beaumont Hamel
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The Somme Battlefield: Lochnagar Crater. It was blown at 0728 hours on 1 July 1916.
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Volume 1
The Western Front

The Thiepval Memorial, Somme Battlefield. © Barbara Taylor

Edited by

Major General (ret'd) Mungo Melvin CB OBE

2nd Edition June 2015

Preface

Lord Astor of Hever

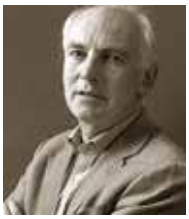
It is one thing to discuss the theory of warfare in the seminar room, but quite another to study its practicalities on the ground. The British army has enjoyed a long and distinguished tradition of visiting former battlefields for commemorative and training purposes. Before the First World War, for example, Major General Henry Wilson directed his Staff College students to run across the ploughed field at Mars-la-Tour (near Metz) - emulating the Prussian cavalry, who boldly charged the French guns on 16 August 1870 in von Bredow's famous 'death ride'. Later generations of soldiers inspected not only this battlefield, but also the greatly many more of the First and Second World Wars, where their own grandfathers and fathers had fought. Therefore, as we now mark the centenaries of the First World War, it is entirely fitting that the Army should publish this new guide to the principal battles on the Western Front. I am pleased to see that it includes not only those involving primarily British Empire and German forces, but also other equally significant battles in which the French and, later, United States armies played predominant roles.

I am in no doubt that this publication will provide a useful and welcome source of reference for all those taking part in the major commemorations, in military training events and in civilian educational visits. In addition, the Guide should also stimulate further research and reflection not only on the generalship, tactics and technologies of the war, but also serve to remind us of its harsh realities, not least the huge personnel and materiel costs to all the nations involved. Study of this conflict, moreover, reveals much about the human spirit. Shortly before his death at the Battle of Third Ypres in August 1917, one of my forebears, Esmond Elliot, a subaltern of the Scots Guards wrote: '… the Battalion has probably got to do a raid. The whole of my Platoon volunteered for it, which pleases me awfully'. Elliot was but one of the so very many of his generation who laid down their lives for King and country.

In closing, I commend this Battlefield Guide, thanking Major General Mungo Melvin and his expert team of authors, cartographers and designers who have put it together. I am delighted to be associated with it.

Foreword

Professor Sir Hew Strachan



Today's visitor to the Western Front sees a landscape that has been permanently changed by the fighting of the First World War. The signs are everywhere, unmistakable and harrowing. But they are not trenches and shell holes. The farmers of northern France and Flanders have returned their land to the production for which most of it is so well adapted. What the eye falls on is less the evidence of how the war was fought in 1914-1918 and more how it has been commemorated since. In the 1920s the line of the front was transformed by the continuing work of the Imperial (now Commonwealth) War Graves Commission. The tourist requires effort and imagination to look past the cemeteries and memorials, which now dominate the built landscape, to the vestiges of the fighting, particularly in the summer when crops and undergrowth obscure even those that remain.

Most of the Western Front was held by the French army, the de facto senior partner in the alliance until at least mid 1917, and the equal of the British until the war's end. What we now think of as its sector (although it too suffered at Ypres and Arras) extends from south of the Somme to the Alps, and is marked by more conspicuous geographical features than that of the British. The ground rises as it overlooks the Île de France, runs along the Chemin des Dames to Champagne, executes a right-angled turn on the Meuse at Verdun, and then extends south along the Vosges into the foothills of the Alps.

The role of the British Expeditionary Force is inexplicable without reference to this broader strategic context, even if the relatively featureless ground to which it was tied can make the tactics of the war even harder to explain. Rises of a few metres, at Hill 60 (near Ypres) or Passchendaele, came to possess a significance which can now only be easily grasped at Messines, Vimy and possibly Thiepval.

This ground witnessed some of the most intense and protracted battles ever fought by the British army. Indeed to call them battles in the sense used in 1914 trivialises them. Simultaneously British soldiers waged war in Italy, the Middle East and sub-Saharan Africa; nor did the fighting end in 1918, as Britain intervened in Russia and confronted rebellion and resistance on the 'southern arc of empire', from Egypt to Afghanistan. Gains measured in hundreds of yards on the Western Front were set in the context of a global war. At first blush such a struggle seems incomprehensible today. This Battlefield Guide is the place where understanding can begin: the Western Front was the war's pivotal theatre, and its tactical and operational underpinnings conditioned the whole war.

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ABMC	American Battle Monuments Commission
AHB	Air Historical Branch
CWGC	Commonwealth War Graves Commission
IWM	Imperial War Museum
NAM	National Army Museum
NHB	Naval Historical Branch

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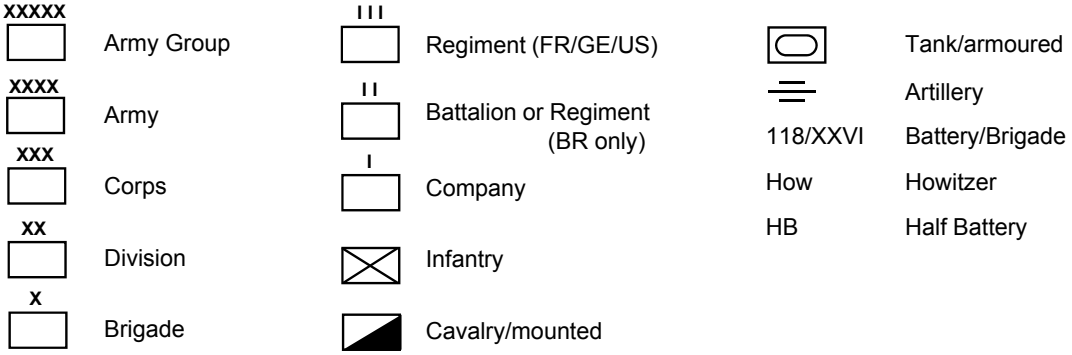
General Key for All Maps

Formation/Unit National Designators	
Red	German
Blue	Allied
AEF	American Expeditionary Forces
ANZAC	Australian and New Zealand Army Corps
AuH	Austro-Hungarian
AUS	Australian
BE	Belgian
BEF	British Expeditionary Force
BR	British
CAN	Canadian
FR	French
IT	Italian
MO	Moroccan
NZ	New Zealand
PO	Portuguese
US	United States
Bav	Bavarian
Col	Colonial (French)
Erz	Ersatz
Gd	Guards (British or German)
Ldw	Landwehr
Mar	Marine (US)
Res	Reserve
Ter	Territorial (French)

British Regiments	
A&SH	Argyle & Sutherland Highlanders
Beds	Bedfordshire Regiment
BW	Black Watch
Border	Border Regiment
CH	Cameron Highlanders
CGds	Coldstream Guards
DCLI	Duke of Cornwall's Light Infantry
DG	Dragoon Guards
Dukes	Duke of Wellington's Regiment
ES	East Surreys
GG	Grenadier Guards
GH	Gordon Highlanders
Glouc	Gloucester Regiment
Gr How	Green Howards
KO	King's Own (Royal Lancaster)
KOSB	King's Own Scottish Borderers
KOYLI	King's Own Yorkshire Light Infantry
KRRC	King's Royal Rifle Corps
LF	Lancashire Fusiliers
Leic	Leicester Regiment
Linc	Lincolnshire Regiment
LNL	Loyal North Lancashires
Manch	Manchester Regiment
Middx	Middlesex Regiment
NF	Northumberland Fusiliers
Northants	Northamptonshire Regiment
RBks	Royal Berkshire Regiment
RF	Royal Fusiliers
RFA	Royal Field Artillery
RGA	Royal Garrison Artillery
RHA	Royal Horse Artillery
RI	Royal Irish
RIF	Royal Irish Fusiliers
RIR	Royal Irish Rifles
RS	Royal Scots
RSF	Royal Scots Fusiliers
RWF	Royal Welch Fusiliers
SG	Scots Guards
SR	Scottish Rifles
Suff	Suffolk
SStaffs	South Staffordshire Regiment
SWB	South Wales Borderers
VR	Vaughan's Rifles
Wilts	Wiltshire Regiment
Worc	Worcestershire Regiment



Soldiers marching through Birmingham railway station, 1914.
© NAM

Introduction

Background

During the First World War (1914-1918), the British army fought in several battlefronts. These included the Near and Middle East, East Africa, Gallipoli, Salonika and Italy. Yet the main military effort throughout this global conflict was on the Western Front. The fighting there represented the Army's 'dominating experience of the war', for 'most British soldiers who came under fire did so in Belgium and France'.[1] Because of its proximity, and not least on account of the resilience and sacrifice involved in trench warfare, the Western Front continues to fascinate the British, attracting an unrelenting flow of civilian and military visitors.

In 1995, the British army published a detailed and highly informative guide to the battlefields of Belgium and Northern France.[2] Written by the celebrated military historian Richard Holmes, it was the first of three volumes conceived to provide an authoritative reference work for battlefield studies – whether unit 'tours' or more formal 'staff rides', run as part of formation training or professional military education.[3] Describing the battles of Waterloo; then Mons, Le Cateau and First and Third Ypres of the First World War; and finally the British armoured counter attack at Arras in the Second World War, this publication has been long out of print. Unfortunately, the second and third volumes were not funded and the project lapsed.

With the centenaries of the First World War now upon us, the Army has decided to produce a new guide, less detailed than the original, but much wider in scope. It includes the major battles fought by the British Expeditionary Force (BEF), including imperial forces,[4] and its allies on the Western Front. Written by a team of military historians, many of whom were recruited from the British Commission for Military History, the authors also include retired or serving officers of the British, French and United States armies and the heads of the three Service historical branches. Thus this volume attempts to combine academic scholarship with practical military experience and insight.

Purpose

The Guide has been published to provide a handy, compact source of reference to the major battles and other significant actions that took place on the Western Front during the First World War. It is designed to inform participants of the First World War centenary commemorations and all those involved in learning events such as battlefield studies. It should also provide some wider educational and training benefit: descriptions of past events may provoke fresh thinking about contemporary challenges. While the character of conflict continues to evolve, the nature and realities of war have an enduring quality. Hence it is hoped that this Guide will provide not only a useful source of information to stimulate reflection, discussion and debate, but also serve as a fitting centennial tribute to the achievements and sacrifice of those who fought on the Western Front of the First World War.

Approach

The authors of the Guide have made no attempt to provide a comprehensive history.[5] Thus this publication does not concern itself with either the causes or the consequences of the First World War, nor does it deal with (apart from noting where relevant) the politics, economics or social aspects involved in directing and running nations' war efforts. Nor does it provide personal insights into the leading commanders and the men they led into battle.[6]

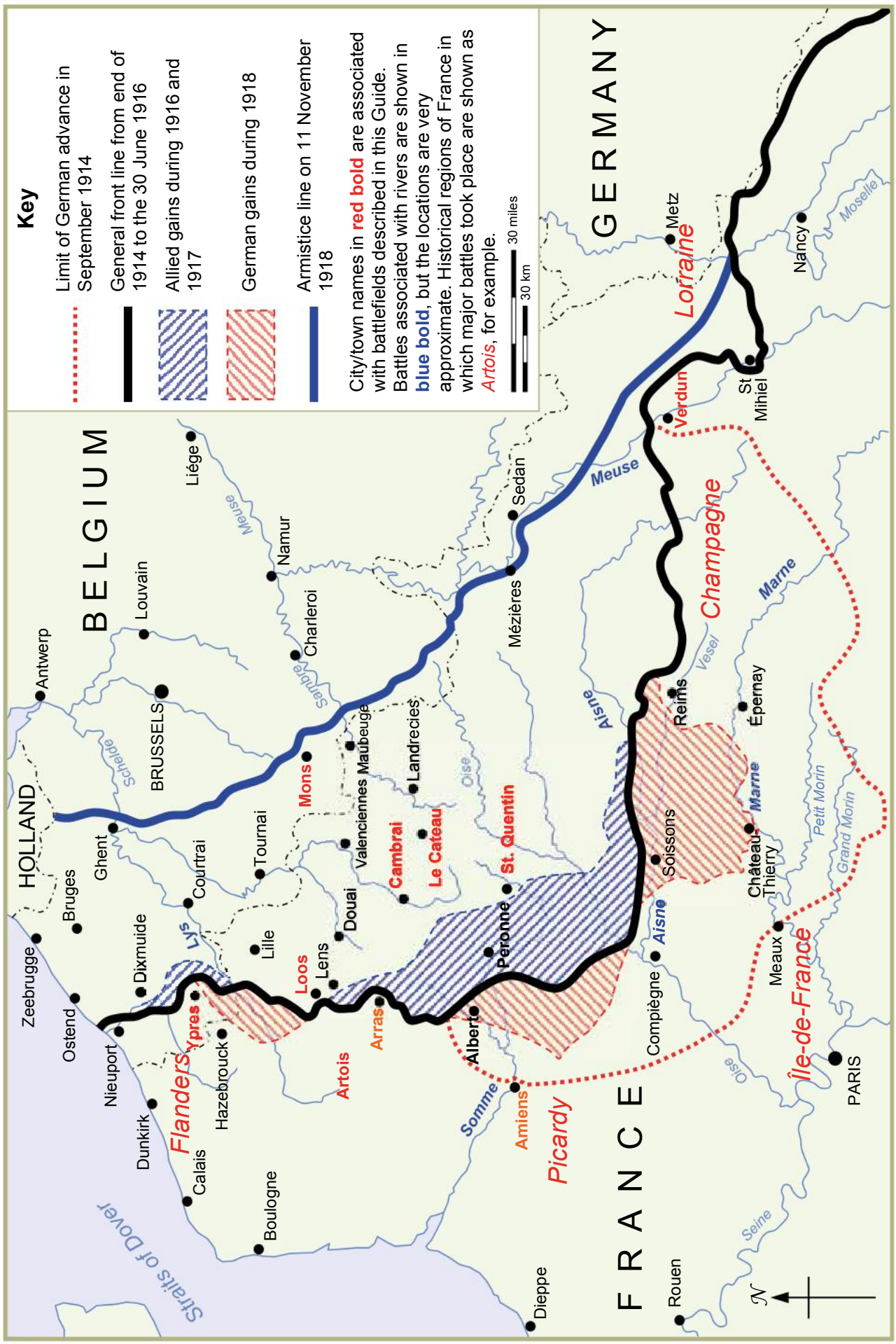
[1] Richard Holmes, *The Western Front* (London: BBC Books, 1999) p. 17.

[2] Richard Holmes, *Army Battlefield Guide: Belgium and Northern France* (London: HMSO, 1995).

[3] For a description of such training methods, and recommendations for their conduct, see Brigadier R.A.M.S. Melvin, 'Contemporary Battlefield Tours and Staff Rides: A Military Practitioner's View' in David Ian Hall (ed.), *The Relevance and Role of Military History, Battlefield Tours and Staff Rides for Armed Forces in the 21st Century*, *The Journal of the Joint Services Command and Staff College,* vol. 5, no. 1 (March 2005).

[4] As will be seen from the descriptions of the battles in this volume, formations from India and the dominions of Australia, Canada, New Zealand, Newfoundland and South Africa made very significant contributions to the BEF, making this an all-Empire effort.

[5] For a compelling overview, read Michael Howard, *The First World War: A Very Short Introduction* (Oxford: Oxford University Press, 2007). For the 'road to war', see Christopher Clark, *The Sleepwalkers: How Europe went to War in 1914* (London: Allen Lane, 2012) and Margaret MacMillan, *The War that Ended Peace: How Europe Abandoned Peace for the First World War* (London: Profile, 2013). For the war's opening phases, see Max Hastings, *Catastrophe: Europe Goes to War 1914* (London: William Collins, 2013). See also Hew Strachan, *The Oxford Illustrated History of the First World War* (Oxford: Oxford University Press, 2014), which contains an excellent series of thematic essays; and for the wider impact of the conflict, see Jeremy Black, *The Great War and the Making of the Modern World* (London: Continuum, 2011).



Map 0.1 – The Western Front, 1914-1918

Rather, with a few exceptions, the Guide's focus is pitched at the operational level, midway between the military strategy that set out the higher direction of the war at a theatre level and the tactics and technologies used by the armies to execute it. Although the 'operational level' was not a term used at the time, a retrospective study of the battles using this concept can prove revealing and shed useful light on some of the higher-level decision-making during the course of the war. That said, readers are reminded that General Hindsight can also prove an untrustworthy ally. As the Guide seeks to demonstrate, the contemporary strategic context, whether in terms of alliance or coalition imperatives or limitations of personnel and materiel, had a profound influence on the rationale for, planning and conduct of operations on the Western Front. Such factors similarly affected all other theatres of war. So did the learning processes undertaken by the armies and air forces – Allied and German alike – in attempting to break the deadlock of trench warfare, a major theme that runs through the descriptions of the battles, demonstrating a combination of tactical initiative and technical innovation worthy of study today.

Scope

After this introduction, the main part of the Guide consists of 24 descriptions of battles. These are designed to give an overview of the major battles in terms of strategic context, the ground, the planning and deployment of the principal forces engaged, the major actions and consequences. The casualties are also listed, not least to remind us of the huge human endeavour, cost and sacrifice involved. To provide further background, six thematic essays then conclude the volume, focusing in particular on the technologies involved, and on maritime and air support.

Selection of Battlefields

The selection of the battlefields has been governed by whether the battle concerned will figure in national or international centenary commemorations, and not least for its anticipated learning benefit. Thus the first battles to be commissioned were those selected by the British government as national centenary events: Mons (1914), Somme (1916) and Third Ypres (1917); Amiens (1918) has been included in the anticipation of it being added to this list. Then two battles that Scotland will commemorate: Loos (1915) and Arras[7] (1917). Of particular significance to Ireland (apart from the Somme) is Messines (1917), in which both unionists and nationalists fought side-by-side. Filling in important gaps in this sequence of primarily British-German battles are Le Cateau (1914), together with First (1914) and Second Ypres (1915).[8]

Bearing in mind the huge interdependence of British and French forces throughout the war, and not least the strategic imperatives and operational consequences associated with their actions, the battles of First Marne (1914), First Aisne (1914), Neuve Chapelle (1915; also significant for the employment of the Indian Corps), Second and Third Artois (1915), Verdun (1916), Second Aisne (the Nivelle Offensive, 1917) and Second Marne (1918) have all been described and analysed. German strategic ambition and operational planning is reflected not only in the opening battles of 1914 and in Verdun, but also in the offensive Operations MICHAEL and GEORGETTE (both 1918). The growing and ultimately decisive strategic contribution of United States forces during the last year of the war is made clear in the descriptions of the battle of Belleau Wood (June 1918), and more particularly, of the Meuse Argonne offensive (September-November 1918). Stressing the point that the war did not end futilely in the mud of Passchendaele, a description of the first mass use of tanks and of modern artillery techniques at Cambrai (1917) is also included, as is the first tank vs. tank action at Villers-Bretonneux[9] (April 1918). Finally, an account of the battles for the Hindenburg Line (September-October 1918) concludes the battlefield series.

Major Themes

A number of major themes, some closely related to the principles of war, permeate the study of the twenty-four battles, which, despite the passage of a century, still have contemporary interest and relevance to the development of modern armies. The first theme is of scale and critical mass. The chapters by Mungo Melvin and Spencer Jones on Mons and Le Cateau respectively highlight the difficulties the British Expeditionary Force (BEF) faced in the opening weeks of war. Although well-trained and fighting very credibly, it was out-manoeuvred by a superior German force. Arguably, it was not of a sufficient size to fight in a major European war until 1916, and

[6] There is a huge literature on this subject. Marshal Ferdinand Foch's account of the First World War provides an indispensible French perspective, as does a study of Field-Marshal Haig for a British one. See Colonel T. Bentley Mott (trans.), *The Memoirs of Marshal Foch* (London: Heinemann, 1931) and Gary Sheffield, *The Chief: Douglas Haig and the British Army* (London: Aurum Press, 2011).

[7] The fight for Vimy Ridge was part of the Arras offensive in April 1917. Canada commemorates this famous action at the site of its national memorial on the Western Front (see Chapter 13).

[8] Though care should be taken with this generalization. By the end of the First Battle of Ypres, for example, as Marshal Foch observed, 'on November 5th [1914], the French held eighteen miles [of the front] and the British nine. ...It would be contrary to the truth to speak of the battle and victory of Ypres as exclusively British.' (Foch, p. 197)

[9] Villers-Bretonneux is an Australian national centenary event in 2018, based on the location of the Australian national memorial (see Chapter 21).

remained a junior partner to the French army certainly until 1917, and in many respects thereafter. Throughout the conflict the British effort was tied strategically to French planning. The required critical mass of the British army, meantime, not only concerned the men and guns expressed in the number of divisions that could be fielded, and in their supporting engineering and logistics, but also in the quality of command and general staff work, which was in many cases lacking. While endeavour and valour at the tactical level could not make up for inherent strategic or operational shortcomings in an industrial war of unprecedented scale and intensity, nonetheless brave individual deeds, and spirited small-scale actions, could either forestall disaster or exploit success. Smith-Dorrien's decision to stand and fight at Le Cateau is a case in point.

In his chapter on First Marne, Tim Gale highlights the fact that, initially, the war on the Western Front was primarily a French-German affair. More particularly, he describes how the German Schlieffen Plan[10] culminated before the Germans could fully envelop and defeat the French army and the BEF, not least through faulty German intelligence, planning and command decisions. The Allied victory resulted in a strategic turning point in the war, a success much down to the superior generalship of General Joseph Joffre, who out-thought and out-fought his German counterpart, Helmuth von Moltke. Frank Baldwin picks up the analysis of the BEF in his account of the First Battle of the Aisne, demonstrating that while the German army was forced on to the defensive following its defeat at the Marne, the British army possessed neither the numbers nor the weaponry to inflict a significant reverse. This is where trench warfare started, eventually running 750 kilometres from the Channel coast to the Swiss border. Both sides would have to learn, and to adapt very quickly in order to survive, let alone prevail in this new environment of battle.

John Lee then describes the near destruction of the BEF in his chapter on First Ypres, initially a battle of encounter, when on a couple of occasions the German army seemed poised to capture the city, a vital communications hub and anchor of the Allied defence in Belgium. Yet the BEF, together with Belgian and very significant French forces (often overlooked in accounts of the battle), held on, displaying remarkable powers of resilience. The cumulative losses since the beginning of the war, however, began to tell severely on all the armies involved. The German army was to pay a heavy price by throwing ill-trained reserves into the battle at Ypres, resulting in the so-called 'death of the innocents'; a sacrifice that is remembered at the German military cemetery at Langemarck. There was certainly no monopoly of either success or failure on the Western Front, as this and later battles until the end of the war would amply demonstrate.

The battles of 1915 highlight the demands of coalition warfare, the close linkages between home and war fronts, and the painful learning process undertaken by all parties to the conflict. Whereas the German army concentrated its efforts on the Eastern Front, aiming to inflict a decisive defeat on the Russians and thereby propping up its Austro-Hungarian ally in the process, the French army sought to exploit this situation and recover as much lost sovereign territory as possible by offensive action. Although the BEF was not yet of a critical mass or equipped to mount a major operation, it was obliged to assist the French. Moreover, the diversion of much needed resources – both in men and in materiel – to the Dardanelles had exacerbated the situation. Nonetheless, as Michael Orr describes in his chapters on Neuve Chapelle and Loos, the BEF began to learn how to attack, realising that a critical concentration of artillery was crucial to success; but so too was the timely committal of operational reserves. The former depended on establishing an industrial base at home to produce sufficient numbers of heavy guns and ammunition; the latter was a matter of competent generalship in the field. While the 'shell crisis' led to political change in Britain and, eventually, to a huge expansion in the munitions industry, doubts as to the ability of the commander-in-chief of the BEF, Field-Marshal Sir John French, led in December 1915 to his replacement by General Sir Douglas Haig.

Orr observes acutely, while the BEF learnt hard lessons in 1915, so too did its opponent. The 'learning curve', which some historians apply to the BEF's experience on the Western Front, applied equally to its French ally and to the Germans, as all armies sought a winning model to overcome the deadlock of trench warfare. The enormous difficulties the French faced in countering growing German defensive expertise are described in Cristophe Gue's account of the Second and Third Battles of Artois, which proved costly failures to capture the vital ground of Vimy Ridge, later to fall to an attack by the Canadian Corps in April 1917. Gue suggests that a quest for a decisive victory at Artois and elsewhere on the Western Front in 1915, combined with a growing political impatience for strategic results, led to repeated counter-productive attacks and huge losses. Furthermore, he argues, the undiminished faith in the power of a major offensive delayed the necessary adaptation and innovation to the new conditions of war. Yet there was some benefit: research has also shown these costly battles provided

[10] Arguably, one so heavily modified by Moltke the Younger that it should be referred to as the 'Schlieffen-Moltke' plan.

the source of modern artillery-infantry tactical methods, which the French were able to demonstrate the following year at the Somme.[11]

The German army, meanwhile, was not entirely passive on the Western Front during 1915. As John Lee demonstrates in his chapter on Second Ypres, even a strictly limited attack combined with the first use of poison gas pushed in the Allies' defences considerably, and nearly led to the loss of the city. Improvised and inadequately supported or concentrated British counter-attacks in response, however, achieved very little apart from lengthening the casualty lists. As the French and British were to find out for themselves at the Second Battle of Artois and at Loos respectively later that year, the employment of gas would not provide an operational 'silver bullet'. Neither would tunnelling and mining operations, unless conducted on a much larger scale such as at Arras and Messines in 1917. There was clearly still much learning to be done on the battlefield.

Two great events dominated the Western Front in 1916: the battles of Verdun and the Somme. Frank Baldwin describes the first, comparing the detailed planning preparation by the Germans with the French neglect of Verdun's defences. Though the German approach in seeking to win an attritional battle on ground that France would have to defend ultimately proved flawed, the cost to the French was very high. It brought them on to the verge of defeat. Consequently, the grand Franco-British offensive on the Somme not only had to be brought forward, but the planned French contribution diluted. In his account of the Somme, John Ross makes clear that there was much more to the battle than the disastrous first day for the British on 1 July 1916. Despite the unprecedented losses, a product of an insufficiently effective bombardment and poor assault tactics, largely due to deficiencies in resources, artillery techniques and training, the British army, now a mixture of Regulars, Territorials, Kitchener volunteers, and conscripts, fought on, learning 'on the job'. Innovation came soon to the battle, which stretched into November, with successful night attacks conducted in mid July, and later, with the first employment of tanks. In this prolonged battle of attrition, as at Verdun, the German army also suffered grievously.[12] Furthermore, the fighting at the Somme informed both sides as to how to develop their tactics. While the French and British armies continued to develop their offensive tactics and techniques, the German army introduced a flexible doctrine of 'elastic' defence in depth.[13] It incorporated increases in infantry firepower and streamlined command and control to speed up the employment of reserves, all innovations that the Allies were to face at their cost in their offensives of 1917.[14]

John Peaty analyses the battle of Arras of April-May 1917, in which, he stresses, the Canadians' successful seizure of Vimy Ridge was only the northern part. He gives due emphasis to the fighting in the centre of the sector (astride the river Scarpe), where significant gains were also made by British forces, including three Scottish divisions, and explains how the Germans' elastic defence thwarted British and Australian attacks in the south. The whole battle, however, was linked to the French Nivelle Offensive or the Second Battle of the Aisne, described by Frank Baldwin, which had promised so much but achieved very little apart from enormous losses in the ferocious fight for the Chemin des Dames. As Baldwin stresses, building on the points made by Peaty, through their elastic defence, the Germans made the Allies pay severely for any penetration of their defensive zone, and nowhere was the much longed-for operational level breakthrough achieved. Furthermore, the abortive Nivelle Offensive led to widespread mutinies in the French army. Decisive French military leadership, however, stemmed the breakdown in French morale: the French army recovered, developed its tactical techniques and continued to fight hard while avoiding big attritional battles.[15]

It fell largely to the British to carry the main burden of the Allied offensive effort on the Western Front for the

[11] See, for example, the analysis in Jonathan Krause, 'The French Battle for Vimy Ridge, Spring 1915', *The Journal of Military History* 77 (January 2013), pp. 523-556. He argues that while the Battle of Second Artois was a failure, 'it [nonetheless] represents a clear shift of operations on the Western Front from scrappy, unorganized attacks against thin, improvised defences to the more detailed scientific operations of 1916 and onwards'; and secondly, it 'contains a large number of practices and precepts which are generally attributed to operations in 1916–1918'.

[12] Many would argue that this mutual destruction provides scant justification for the Somme. Jack Sheldon, *The German Army on the Somme, 1914-1916* (Barnsley: Pen & Sword Military, 2007) observes (p. 398) that the battle 'had to be fought, but to attempt to justify it on the grounds that the British army was all the better for it and that somehow makes the cost in blood and treasure a price worth paying, is to stretch a point, to put it no more strongly'. For an alternative view, see William Philpott, *Bloody Victory: The Sacrifice on the Somme* (London: Little, Brown, 2009) who concludes quizzically (p. 629) that the battle could 'mark the death-knell for the old ways of warfare and the cradle of modern combat. It could be both a necessary evil and a useless slaughter: a meaningful struggle and a futile sacrifice. …It could be both a victory and a defeat, for both sides at the same time, or over time'.

[13] The evolution of British organization and technique is described by Paddy Griffith, *Battle Tactics of the Western Front: The British Army's Art of Attack 1916–18* (New Haven & London: Yale University Press, 1994). This is an excellent study, well worth examining in detail.

[14] See Timothy T. Lupfer, *The Dynamics of Doctrine: The Changes in German Tactical Doctrine during the First World War,* Leavenworth Papers, no. 4, U.S. Army Command and Staff College, July 1981, pp. 11-21.

[15] See the Battle of la Malmaison (23-27 October 1917) at Chapter 17.

British and German wounded, Bernafay Wood, France, July 1916. © NAM

remainder of 1917. Three quite different battles were then fought by the British army: Messines Ridge (June); Third Ypres (July-November) and Cambrai. Edward Madigan describes the first of these, analysing the mine operations and the innovative combined arms tactics that brought a remarkably quick success at relatively little cost. He also explains in some detail that the shared memory of Messines has become a significant factor in Northern Ireland's peace process. Economical tactical success, however, eluded the BEF in the mud of Third Ypres. As Jeremy Pughe-Morgan indicates in his chapter of the battle, the post-war assessment of Lloyd George that 'Passchendaele was indeed one of the greatest disasters of the war' was largely self-serving, reflecting the tensions between him and the British military leadership over the costs and benefits of the Flanders offensive. There is an enduring reality here worth highlighting. The greater the stakes in blood and treasure, and thereby in reputation, the more likely it is for a politician to interfere in military planning. In consequence, commanders need to be not only professionally robust but also politically aware. Although no operationally significant gains were made at Ypres in the late summer and autumn of 1917, the battle had some strategic value in fixing much of the German army, albeit a result achieved at horrendous cost. Charles Messenger describes the final main action of 1917, the battle of Cambrai. His account of the development of tank tactics under the influence of J.F.C. Fuller and of artillery techniques by Brigadier Owen Tudor should be read in conjunction with Jonathan Bailey's essay on the revolution in military affairs and the birth of a modern style of warfare. Notwithstanding the stunning British initial tactical gains at Cambrai, the fact remains that the success of the German counter attack is equally instructive. The church bells were rung in Britain a year prematurely. On both sides, the battle showed that co-operation by all arms, closely integrating as combined arms, was equally essential for the conduct of the offensive and defensive battle.

David Zabecki describes the first two great German offensives of 1918: Operations MICHAEL and GEORGETTE. He notes how the former, commencing on 21 March, came very close to succeeding in destroying the BEF (Gough's Fifth Army was shattered), but the reasons for its failure 'lay almost entirely on the operational level'. Ludendorff failed to appreciate the critical importance of Amiens, the seizure of which would have paralysed British logistics. Similarly, in GEORGETTE (which started on 9 April) the Germans won great tactical victories, but failed to capture either the key British transportation node at Hazebrouck or the politically significant city of Ypres. While the BEF was on its knees (53 out of 60 divisions on the Western Front had fought in countering one or both

German offensives), Germany, despite the reinforcement from the Eastern Front, was now approaching the end of its manpower reserves. The French army, which sent reinforcements to assist the British, was not defeated in subsequent German offensives; in the meantime, the build-up of United States troops in France was becoming ever more significant. Zabecki describes the second engagement by American troops on the Western Front in June 1918 at Belleau Wood, which not only demonstrated to the French and British how hard the newcomers could fight, but the vigour of the U.S. Marine Corps action also shocked the Germans. Technology came to the aid of all sides. Geoffrey Vesey Holt describes the first tank vs. tank action at Villers-Bretonneux in April 1918; this battle was equally significant for the brilliance of the Australian night attack that secured not only the town, but also stabilised the outer defence of Amiens.[16]

Tim Gale describes the Second Battle of the Marne (15 July – 6 August 1918), which proved a stunning success for the Allies. Not only was a major German salient removed, but also the surprise Franco-American counter offensive showed the growing capability of the Allies to deceive the German High Command and to take the operational initiative. It also provided a much-needed fillip to Allied morale following the sobering setbacks of the first half of 1918. Gary Sheffield describes how the BEF then took up the fight at Amiens alongside the French army at Montdidier, inflicting such a major reverse on the Germans that Ludendorff famously called 8 August 1918 the 'Black Day of the German Army'. This battle, which featured a sophisticated combined arms attack (with much air support) by British, Australian and Canadian corps, and not least the parallel contribution of two French armies to the south, initiated the start of the '100 days' that led to the Armistice on 11 November 1918. However, there was much fighting to be done in order to bring Germany to the edge of defeat on the Western Front.

Douglas Mastriano describes the evolution of Marshal Foch's thinking following the battles of Second Marne and Amiens-Montdidier, and the emergence of his master plan to defeat the German army through a series of powerful blows by Allied forces along the whole of the Western Front. He highlights the significance of the Franco-American Meuse Argonne offensive operation in drawing off and defeating numbers of the German strategic reserve divisions while threatening the Germans' strategic line of communications on the Sedan to Charleville-Mézières railway. One of the major engagements in this series of major Allied offensives was the set of battles for the Hindenburg Line (September-October 1918), analysed by Jonathan Boff. He explains how British, Australian, Canadian and United States forces prevailed over an enemy, still fighting very hard. The fight included the storming of the St. Quentin Canal and the spectacular capture of the bridge at Riqueval. As at Amiens, it was training, combined arms tactics and air support that all provided vital constituents of success. It then became clear that though the war was not quite over, the German army's powers of resistance were weakening.

Above all, the sequence of Allied victories from the Marne onwards showed how strategic, operational and tactical advantage had shifted since the Spring of 1918, when defeat had beckoned. There are surely lessons here not only in the tactics and operational methods used, but also in a study of morale and resilience at all levels of command, and in an examination of what provided the solid foundation of that success. For all the advances in tactical technique and modern technology, it needed men – generals and private soldiers alike – to apply them adroitly on the battlefield with great determination and often heroically. It demanded equally the unstinting support of men and women serving behind the land battlefront, fighting at sea and in the air, and working on the factory floor at home. Without adequate scientific, industrial, engineering, logistic and medical support, no armed force can function effectively.[17] That is why a study of battlefields alone is insufficient to understand a 'modern' conflict such as the First World War. Success depends as much on providing sufficient strategic resources as on applying a winning operational design for battle. Both are required, as was shown in the Second World War and in subsequent campaigns. We surely ignore this lesson at our peril.

Finally, in the series of thematic essays, Jonathan Bailey explains the revolution of the battlefield technologies and tactics that took place during the course of the First World War, noting in particular the development of artillery. Stephen Prince describes the vital contribution of the Royal Navy throughout the war, while Seb Cox traces the development of air power, including the foundation of the world's first independent air force – the Royal Air Force – on 1 April 1918. Bob Evans summarises the development of battlefield communications on the Western Front. David Fletcher documents the history of the tank, which first entered action in the latter stages of the battle of the Somme on 15 September 1916. Colin Kerr provides a note

[16] Significantly, the successful Australian counter attack took place on 25 April 1918, the third anniversary of the landings at Gallipoli. The date of 25 April has been commemorated since 1916 as ANZAC Day.

[17] See Chapters 29-37.

on the Commonwealth War Graves Commission, which concludes the volume.

A Note on Terminology

In the British army, a 'unit' is a battalion or equivalent, commanded by a lieutenant colonel. Three or four such units comprise a brigade, commanded in the First World War by a brigadier-general. In 1914, a British infantry division, commanded by a major-general, was a formation of 'all arms'. It consisted of three brigades each of four battalions, three field artillery 'brigades' (of three batteries), a howitzer brigade, a heavy battery of guns, an ammunition column, two engineer field companies, a signal company, a cavalry squadron, a cyclist company, a divisional transport train and three field ambulances. The division's total established strength was 18,073 all ranks, with 76 guns (54 x 18-pdrs, 18 x 4.5" howitzers and 4 x 60-pdrs). Two or more divisions comprised an army corps. Broadly speaking, the French and German armies were similarly structured, except that infantry regiments held three battalions; two such regiments were grouped into a brigade; and two brigades formed a division. French and German divisions were better supported by artillery. During the course of the war, German, French and British army divisions all reduced in size to nine infantry battalions[18]; in contrast, the U.S. Army divisions that entered the fighting on the Western Front in 1918 were nearly double their size with sixteen battalions. Weaponry in all armies evolved rapidly, including the introduction of hand grenades, light machine guns and trench mortars; greatly increased numbers of medium machine guns, and heavy artillery guns and howitzers; and finally the tank.

Mungo Melvin

Further Reading

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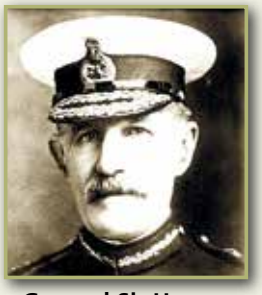
[18] Australian, Canadian and New Zealand divisions retained their twelve-battalion structure to near the end of the war, but with much reduced unit strengths.

The Principal Commanders, 1914-1918

Field-Marshal
Sir John French

Field-Marshal
Sir Douglas Haig


General Sir Horace
Smith-Dorrien

General
Sir Edmund Allenby

General
Sir Julian Byng

General
Sir Hubert Gough

General
Sir Herbert Plumer

General
Sir Henry Rawlinson

Marshal
Joseph Joffre

Marshal
Ferdinand Foch

General
Robert Nivelle

General
Philippe Pétain

General
Victor d'Urbal

General John
'Black Jack' Pershing

Colonel-General
Helmuth von Moltke

General of Infantry
Erich von Falkenhayn

General of Infantry
Erich Ludendorff

Field-Marshal Crown
Prince Wilhelm of
Germany and Prussia

Field-Marshal Crown
Prince Rupprecht of
Bavaria

Field-Marshal
Duke Albrecht von
Württemberg

Introduction to the Second Edition

Background

The first edition of this Guide was published in August 2014, just in time for the British army's Operation REFLECT staff ride in September of that year to the First World War battlefields of Belgium and Northern France. Involving over a hundred young officers of the British, French and German armies, this training event provided the first wide-scale field test of the Guide. The participants of this exercise, and many other readers since, have provided a considerable amount of positive feedback. Requests also came for an expanded version to be produced, and that the print run be extended. In addition, the Guide's success prompted the production of a second volume to cover the 'Forgotten Fronts' of other theatres of war in which the British army was involved, including Gallipoli, Salonika, Italy, Russia, the Middle East and Africa.

Scope

This second (June 2015) edition of what has become Volume 1 of the Army Battlefield Guide to the First World War, while retaining the same format and previous contents, is considerably enlarged. It contains four new 'battle' chapters, a complete revision of an existing chapter, and four new thematic essays describing the very wide scope of the combat, combat service and command support to the BEF.

Themes

Three common threads run through the new chapters, which serve to deepen our understanding of how battles were conducted and how the First World War was fought as a whole. The first is the crucial link between the development of artillery technique and the enabling of tactical, and ultimately, operational-level manoeuvre – the tank, while scoring impressive gains on the battlefield in 1917-1918 did not achieve the same until the Second World War. The second is the comprehensive nature of the engineering, medical and logistic support required to sustain warfare on the Western Front at the grandest, industrial scale. An army at peace tends to forget the very demanding requirements of firepower, protection and supply in war.

The third, and perhaps most enduring, theme concerns learning. While all armies studied previous engagements on the Western Front, the knowledge painfully acquired was often inconsistently, if not inappropriately, applied. This phenomenon reinforces the view that there was no such thing as a simple 'learning curve' on this front, or, for that matter, in any other theatre of the First World War: rather a pair of 'opposing' sinusoidal (wave-like) curves with 'highs' and 'lows' of progress (considered to represent consolidated learning) over time. When one side established a 'high' against the other's 'low', success for the former was more likely to occur. As Bill Philpott has observed, this 'apparently static battlefield' on the Western Front became 'a vibrant and dynamic military school', in which 'tactical innovation and technical novelty tripped over each other, as offence and defence battled for superiority'.[1] In the ultimate contest of war, in the inevitable cycle of action and reaction (what J. F. C. Fuller described as the 'constant tactical factor'[2]), however, past success (as in economics) provides no guarantee of future performance. The relative state of research and development, and associated tactical and technical advances, are but contributory factors in determining the outcome of any battle, campaign or conflict. Other aspects include not only terrain and weather, and the level of armies' training, equipment and supply, but also, as crucially, the quality of their leadership and state of morale.

Furthermore, the fighting power of any army on the battlefield is dependent on the political, economic and public support at home. Hence a theme running through many of the chapters, whether old or new, is the impact of politicians in wishing to end the war as quickly as possible at minimum necessary cost – the revised account of the battle of Third Ypres provides a good example of this process. Together, these pressures placed enormous demands on both the home and battle fronts; and not least on commanders and staffs seeking to innovate and so break the deadlock of trench warfare while the casualties steadily mounted on all sides. It was to prove a costly and uneven experience, with many false dawns.

[1] William Philpott, *Bloody Victory: The Sacrifice on the Somme* (London: Little, Brown, 2009) p. 29.

[2] There were two aspects to this concept, originally enunciated by J. F. C. Fuller in *The Dragon's Teeth* (London: Constable, 1932) pp. 212-213. The first concerned technical development, in which 'every improvement in weapons has eventually been met by a counter-improvement which has rendered the improvement obsolete'; the second addressed a qualitative differential: 'the army which is mentally prepared to meet tactical changes, will possess an enormous advantage over all others'. For a more detailed analysis of Fuller's ideas, Brian Holden Reid, *J.F.C. Fuller: Military Thinker* (London: Macmillan, 1987), pp. 137-138.

As one British general, Noel Birch, wrote after the conflict, 'In truth the problem of semi-siege warfare … had never been studied by the General Staff in peace …, so we had to learn our lesson in the pitiless school of war.'[3]

The New Material

The first new chapter of the Second Edition is by Michael Orr, who fills in skilfully the gap between his original accounts of Neuve Chapelle and Loos (March and September 1915 respectively) with succinct descriptions of the battles of Aubers Ridge and Festubert (both May 1915). These actions, which are often over-looked, included (for the time) a significant proportion of the BEF. The fight at Festubert, for example, involved no fewer than ten divisions: from the Regular Army (4); the Territorial Force (3); the Indian Corps (2); together with the 1st Canadian. Orr explains why the initial success of Neuve Chapelle could not be easily replicated: drawing the appropriate lessons from the first major Allied offensive operation of 1915, the Germans had considerably strengthened their defences. During the assaults of the German line in May 1915, the BEF was unable to produce sufficiently effective artillery preparations: neither the German wire was fully cut nor were their other field defences greatly damaged. Thus the BEF still had a lot to learn, as the subsequent battles at Loos (September 1915) and the Somme (July-November 1916) were to show all too clearly. It all makes for some fascinating, albeit from a British army perspective, rather dismal reading.

The second new battle to be covered is that of la Malmaison (October 1917) by Christophe Gue, building on his accounts of the French Artois offensives of 1915. Following the mutinies within the French army that emanated largely from the abortive Nivelle offensive of April 1917, la Malmaison was the third of three limited offensives designed to restore confidence in the French army, the nation and the Allies. As Gue expertly portrays, success in this case would be achieved by a hitherto unprecedented concentrated fire preparation, and by strictly confining the battle in terms of time and space, and in desired effect. On this occasion the German defenders of the Chemin des Dames were caught out: unable either to reinforce their defences or to withdraw from them, they suffered a not inconsiderable defeat. The significance of this battle is often overlooked: comparing it to the 'mud and blood' of Third Battle of Ypres, the British military historian Cyril Falls described it as a 'perfect offensive', in which 'all went like clockwork'.[4] La Malmaison provides a pertinent reminder of the value of not exceeding the culminating point in battle. Overall, the design, conduct and outcome of this battle go a long way to disprove the old British canard that the French army was a spent force in 1917 after its mutinies, and rather undermines the claim that Third Ypres was ultimately necessary to prevent a French collapse on the Western Front that year.

The third new 'battle' chapter is on Operation BLÜCHER (the Third Battle of the Aisne, May-June 1918), the third of the German Ludendorff offensives of 1918, which has been contributed by David T. Zabecki, an authority in this field. Like its predecessors (MICHAEL and GEORGETTE, both already described by the same author in this volume), and despite the brilliance of the fire preparation designed by the famed German artillery specialist, Georg Bruchmüller (on whom a short biographical note is included), it succeeded tactically but failed operationally. The French Sixth Army, which took the brunt of the German attack, included the British XIX Corps, recuperating after its costly engagements in the earlier German Spring offensives. Unfortunately, despite the protestations of its corps and divisional commanders, warning of the dangers of over-concentrating forces in the front line, the Allied defence had been prepared with insufficient depth. This battle not only demonstrates the fact that lessons previously identified at great cost can be ignored in subsequent actions at much further expense, but also offers an insight into the complexities and challenges of coalition operations. Historically, the battle is important for it paved the way for the great Second Battle of the Marne in which the Allies held a renewed German offensive and then drove it back by adept counter-attacks.

A positive note is sounded in Geoffrey Vesey Holt's revealing description of the battle of le Hamel on 4 July 1918, which took place to the east of Amiens in a lull between German offensive operations. Although a very short action lasting only two hours, and involving only one Australian division (reinforced with American infantry) mounting a limited attack, the engagement is highly significant. It took forward the lessons of the battle of Cambrai including surprise and the integration of air power, artillery, armour and infantry as 'combined arms' through careful planning and preparation, training, experimentation. The tactical success achieved at le Hamel (the subject of a BEF training pamphlet, S.S. 218.J) was replicated on a much larger scale at the battle of Amiens, launched just over a month later on 8 August 1918. Although le Hamel is rightly remembered as a model operation and spectacular feat of Australian arms, it should not be forgotten that the tanks, and the mass of the artillery and the air support (from the newly established Royal Air Force) were drawn from the wider resources of the British Empire effort on the Western Front, of which the Australian Corps under the effective leadership of Lieutenant General Sir John Monash was but one significant part. It was this Dominion corps, together with the equally proficient Canadian

[3] Quoted by Simon Robbins, *British Generalship on the Western Front 1914–18: Defeat into Victory* (London and New York: Frank Cass, 2005) p. 18.

[4] Cyril Falls, *The First World War* (London: Longmans, 1960) p. 285.

Corps under Lieutenant General Sir Arthur Currie, which spearheaded Fourth Army's successful attack at Amiens.

In addition to the new content of the Guide, the opportunity has also been taken to make some minor revisions and a number of corrections to the existing text, and in a few cases, to the maps. One of the original chapters of the first edition has been extensively revised: Jeremy Pughe-Morgan has produced a new version of his chapter on the Third Battle of Ypres, which reflects a number of points raised during the British army's Operation REFLECT 2014 staff ride. In particular, he highlights well the political pressures on the British high command and the operational-tactical dissensions within it. Despite (or perhaps because of) its very controversial nature, the battle still prompts many areas for valuable contemporary discussion and debate, not least an examination of the generalship of the senior commanders, including Field Marshal Sir Douglas Haig.

Three new authors and one original contributor have written thematic essays that complete the volume. The first, by James Cook, describes the evolution of artillery on the Western Front, charting the developments in military technology and in tactical technique that not only featured in the British army, but also across the French and German armies. Echoing Jonathan Bailey's chapter on the revolution of military affairs, the story of the evolution of artillery method (leading to an eventual emphasis on neutralisation as opposed to destruction, as stressed in the associated note on Alanbrooke by David T. Zabecki) provides an important contribution to our understanding of the changing character of the First World War, particularly on the Western Front. Yet the great advances in artillery effort, whether qualitatively or quantitatively, could not have been made without parallel developments in military engineering, mapping and survey and in logistic support. Michael Crawshaw describes the first of these areas, demonstrating the huge demands made on engineers, which enabled an army to live, move and fight. Their work included the expansion of the railway network to serve the needs of the front, whether to bring up ammunition and supplies or to evacuate the wounded. John Peaty provides an equally fascinating account of the enormous progress made in mapping and survey by the British army during the war, which drew not only on the Royal Engineers, but also on contributions of the scientific community (in techniques such as sound-ranging) and that of the Ordnance Survey. Alistair McCluskey provides a crisp description of logistic and medical support to the Western Front, highlighting the huge efforts made to support man and machine at the front from the home base via the lines of communication. Complementing these new chapters, eight fine colour maps have been added by Barbara Taylor, including a 'map of maps', or map index sheet, together with many new illustrations.

Furthermore, the Army's Directorate of Land Warfare has not only produced a compendium of multimedia sources for this volume that will bring any battlefield study to life, but also an electronic (DVD) version of the guide, which contains additional content. While many will download the DVD on to portable electronic devices such as iPads for convenience of use on battlefield studies, others may prefer to refer to this hardback version both on and off the battlefield.

Summary

It is hoped that the revised, second edition, of the Army Battlefield Guide of the Western Front will provide all types of readers, whether military or civilian, British or of other nations, with an easily digestible yet authoritative guide to the main battlefields of the principal theatre of the First World War. It was on this particular stretch of vital terrain in Belgium and France that the invading German army would not only have to be blocked, but also defeated by the Allies in battle. It resulted in a protracted, hard-fought struggle on the Western Front that cost the lives of hundreds of thousands of men. When paying due and dignified tribute to the fallen on all sides, and commemorating their sacrifice, we should not forget, however, that all armies (and air forces) involved learnt from their experiences to greater or to lesser extent. Their enterprise, initiative and innovation, encountering successes and setbacks alike, whether individually or institutionally based, surely remain worthy of study. Above all, we must seek to learn today, and do so with an open mind.

Mungo Melvin

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1. The Battle of Mons
(23 August 1914)

Description	British	German
Commanders-in-Chief	Field-Marshal Sir John French – British Expeditionary Force (BEF)	Colonel-General Alexander von Kluck – First Army
Principal Forces Engaged	**British Expeditionary Force** I Corps: 1st & 2nd Infantry Divisions II Corps: 3rd & 5th Infantry Divisions Cavalry Division (1st-5th Brigades) 19th (Independent) Infantry Brigade (formed 22 August 1914)	**German First Army** III Corps: 5th & 6th Infantry Divisions IV Corps: 7th & 8th Infantry Divisions IX Corps: 17th & 18th Infantry Divisions II Cavalry Corps: 2nd, 4th & 9th Cavalry Divisions
Context	BEF advances into Belgium on the left flank of French Fifth Army. First British land action of the First World War. Hasty defence on the line of the Mons-Condé Canal. II Corps takes brunt of the ensuing action.	Meeting engagement that interrupts the turning movement of the developed Schlieffen Plan, with the German First Army as outermost formation, aiming to advance to the west of Paris and so envelop Allied forces.
Casualties	1,642	6,800[1]
Consequences	Despite spirited action, a British withdrawal (the retreat from Mons) and the battle of Le Cateau (26 August 1914).	Minor delay to German operations. Advance towards Paris resumed, but opportunity to inflict a major blow on BEF lost.

Introduction

Although the initial engagements between the French and German armies following the outbreak of war (principally the 'Battle of the Frontiers', 3-26 August 1914) were on a much larger scale, the battle of Mons has a special status in the annals of the British army and British Empire forces. It was here that the first and last shots of the First World War were exchanged with the German enemy. The British army's first major battle on European soil since Waterloo took place on 23 August 1914.[2] In this baptism of fire, four regular infantry divisions, together with a cavalry division and an independent infantry brigade, of the British Expeditionary Force (BEF) fought against three army corps of the German First Army.[3]

Concentration

Britain had declared war on Germany at midnight on 4 August 1914, triggered by the German violation of Belgian neutrality. Before the conflict the British army general staff had drawn up plans to send an expeditionary force of six infantry divisions and a cavalry division to assist the French army.[4] Pre-war staff talks (led by Major General Henry Wilson, Director of Military Operations) with the French had determined that the British contingent should concentrate in the area of Le Cateau-Maubeuge-Hirson. Such a concentration would extend the French army's left wing opposite the Belgian frontier.[5] However, the British government had agreed neither the deployment of an expeditionary force to France, nor a specific role for

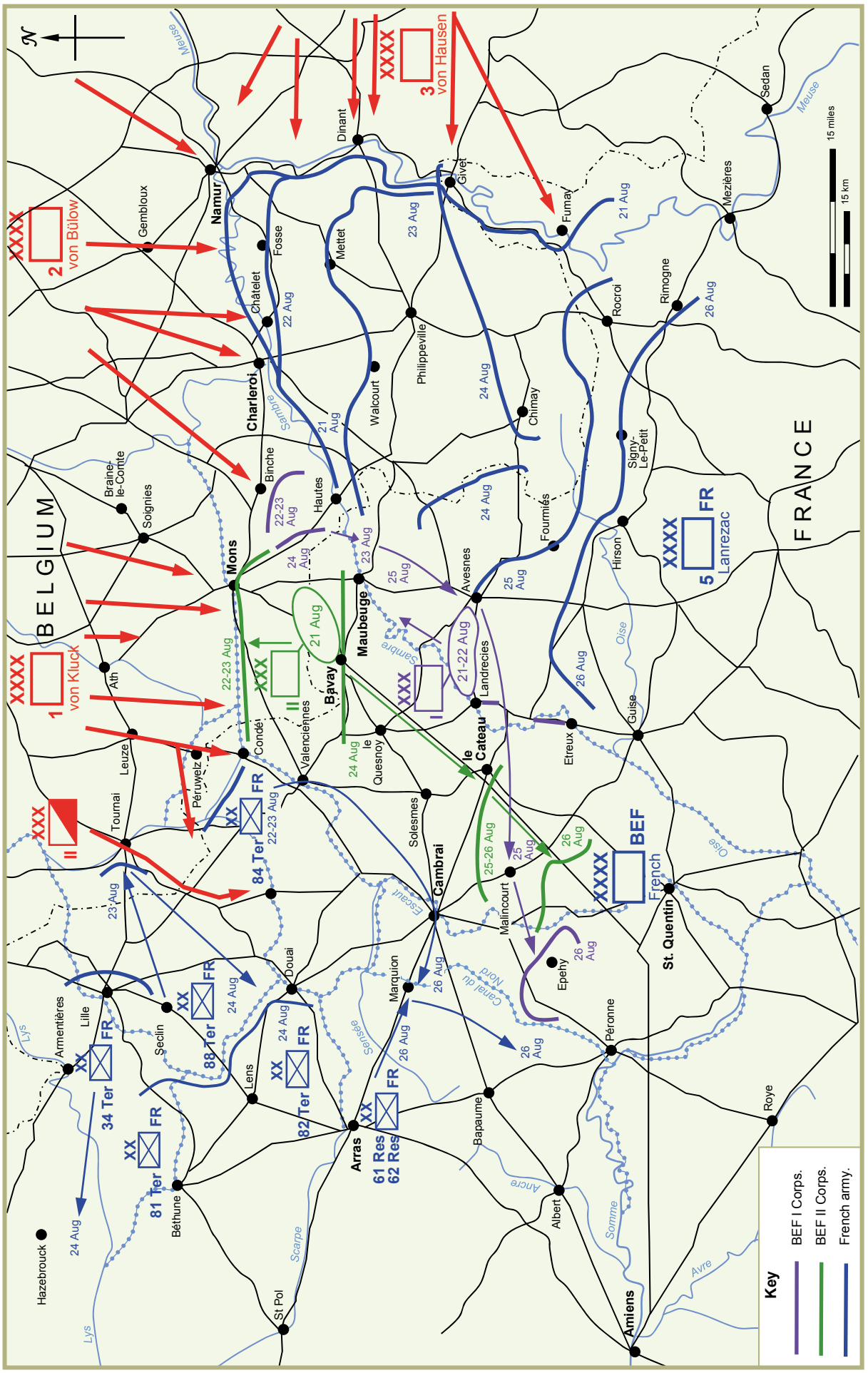
[1] Eric Dorn Brose, *The Kaiser's Army: The Politics of Military Technology in Germany during the Machine Age, 1870-1918* (Oxford: Oxford University Press, 2001), p. 283.

[2] Excepting, of course, the battles of the Crimean War: Alma, Balaklava, Inkerman and Sevastopol (1854-55).

[3] In addition, II Cavalry Corps outflanked the BEF to the west.

[4] For detailed descriptions of the BEF of 1914, see Charles Messenger, *Call-To-Arms: The British Army 1914-1918* (London: Weidenfeld & Nicolson, 2005) and Allan Mallinson, *1914: Fight the Good Fight Britain, the Army and the Coming of the First World War* (London: Bantam, 2013).

[5] This account of the decisions relating to the concentration of the BEF in August 1914 draws heavily on Hew Strachan, *The First World War,* vol. I, *To Arms* (Oxford: Oxford University Press, 2001) pp. 203-207.



Map 1.1 – The Allied Left Wing, 21-26 August 1914

it. Only at a war council convened on 5 August 1914 was the employment of the BEF fully discussed at a political-military level. Whereas it was agreed in principle that it should be sent to France, its composition and destination remained undecided.

The next day, at a second meeting of the war council, Field-Marshal Lord Kitchener, newly appointed Secretary of State for War, announced the cabinet's decision that only four divisions and the cavalry division were to be deployed immediately. While a fifth division would follow soon, the sixth would remain in Britain for home defence duties. Kitchener, Field-Marshal Sir John French (the designated commander of the BEF) and Lieutenant General Sir Douglas Haig (commander of I Corps) all favoured concentrating in Amiens, fearing the BEF would be too exposed to German attack if it were deployed forward to Maubeuge, as argued by Henry Wilson. The embarkation of the BEF commenced on 9 August. Shipped over the English Channel without loss to Rouen, Le Havre and Boulogne, it was complete in France eight days later. By this time, however, the German advance into Belgium was well underway. On 12 August, responding to events and pressure from the French general staff, Kitchener agreed to the BEF concentrating, as originally planned, in Maubeuge. As Hew Strachan has observed:

> British strategy was being subordinated to alliance politics, while British policy was being overborne by French strategy. Britain's entry into the war had been determined by Belgium and the balance of power in Europe; the disposition of its army was being settled by the French general staff.[6]

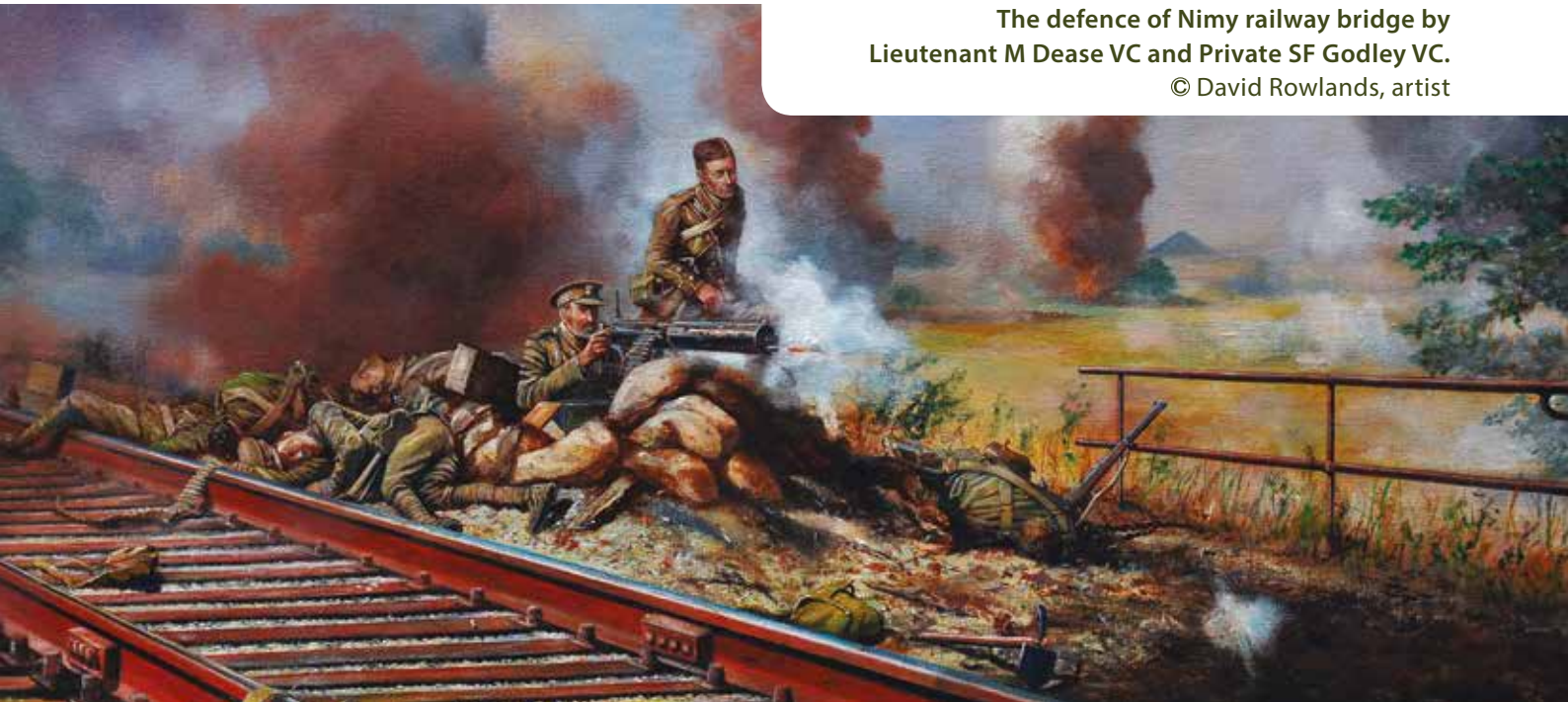
As events would soon demonstrate in the weeks to come (and in the following months and years), the deployment and employment of the BEF would largely be decided on alliance requirements. With Britain remaining very much a junior partner, the strategic lead was French. The effectiveness, if not survival of the BEF, however, in a large-scale continental war for which it was initially neither designed nor equipped, would depend on the operational acumen of its commanders, and on the tactical fighting power of its troops. Both would be severely tested at Mons and in subsequent battles.

Deployment

Formations of the German First Army entered Brussels on 20 August 1914. The same day General Headquarters (GHQ) of the BEF issued orders for a move from its concentration area on the 21st to a line north of Mons: II Corps (commanded by Lieutenant-General Sir Horace Smith-Dorrien) left; I Corps (Lieutenant-General Sir Douglas Haig) right, with cavalry screening the front and guarding the flanks. This manoeuvre was designed to accompany a French general advance with the BEF and the French Fifth Army forming the Allies' left flank. Facing the combined mass of the German Second and Third Armies, however, the French Fifth Army was forced to retreat on the 22nd, leaving the BEF – still advancing on its left – exposed. That morning British and German cavalry had already clashed to the north and east of Mons. An encounter battle would ensue the next day.

During the night of 22nd/23rd August, II Corps, which was to bear the brunt of the inevitable German attack, moved into an over-extended line astride Mons. 5th Division, with 19th Brigade on its left, occupied a hasty defensive position on the 'straight' of the Mons-Condé Canal. 3rd Division defended the canal line further to the east, forming a shallow salient around the north and north-east of Mons from Nimy to Obourg, and then southwards from

The defence of Nimy railway bridge by Lieutenant M Dease VC and Private SF Godley VC.
© David Rowlands, artist



The Mons-Condé Canal at Jemappes, bridged by the engineers of the 6th German Division under fire from the 1/Northumberland Fusiliers. © IWM Q70073

the canal to St. Symphorien. Haig's I Corps was still moving up on the right rear of II Corps, and was not able to make a significant contribution to the battle. The Cavalry Division, less its 5th Brigade deployed on the right flank, massed on the left of 5th Division. GHQ 'Advanced' (Forward) was established at Bavay, while its 'Main' headquarters remained at Le Cateau.

The Mons position was far from ideal. Although the canal line could have been developed into a major obstacle, there was insufficient time and resources to prepare it properly for defence. Battalions were able to dig only 'rough entrenchments' and to throw improvised barriers across roads and railway lines. At the canal, there were too many bridges and lock gates for demolition, and not all possible German axes of advance to it could be covered adequately by artillery and machine-gun fire. Furthermore, the heavily industrialised area around Mons, a 'hideous confusion of a mining district', according to the British Official History, with its numerous slag heaps and workings impeded deployment and visibility.[7]

Smith-Dorrien, who had a good eye for tactical realities, noted in his diary on 22nd August that 'The Mons salient, which is held by the 8th Brigade, is almost an impossible one to defend, but I gather it is not expected that this is to be treated as a defensive position'.[8] He was soon to be proved correct: the salient was vulnerable to enfilading fire on both its flanks.

The Battle

The German attack on Sunday, 23 August 1914, began around 0900 hours with heavy artillery fire directed on to the Mons salient. The two divisions of IX Corps then launched massed infantry assaults, which were repulsed with heavy losses by deadly accurate British machine-gun and rapid rifle fire. On the right of XI Corps, III Corps had joined battle by about 1100 hrs. Its attacks on the canal bridges at St. Ghislain and Les Herbières were beaten off. By midday, however, the pressure on the Mons salient had increased significantly. 4/Middlesex of 8th Brigade at Obourg and 4/Royal Fusiliers of 9th Brigade at Nimy were particularly heavily engaged. The two forward brigades of 3rd Division had to be pulled back when their flanks were turned by German infiltration attacks, but they made their opponents pay dearly for crossing the canal and advancing through Mons. During the course of the afternoon, the 13th and 14th Brigades of 5th Division had held their positions with little difficulty, as had 19th Brigade on II Corps' left. Yet the German pressure across the front was relentless. By now, elements of 2nd Division of I Corps had entered the fight, blocking a gap that emerged between the 3rd and 5th Divisions.

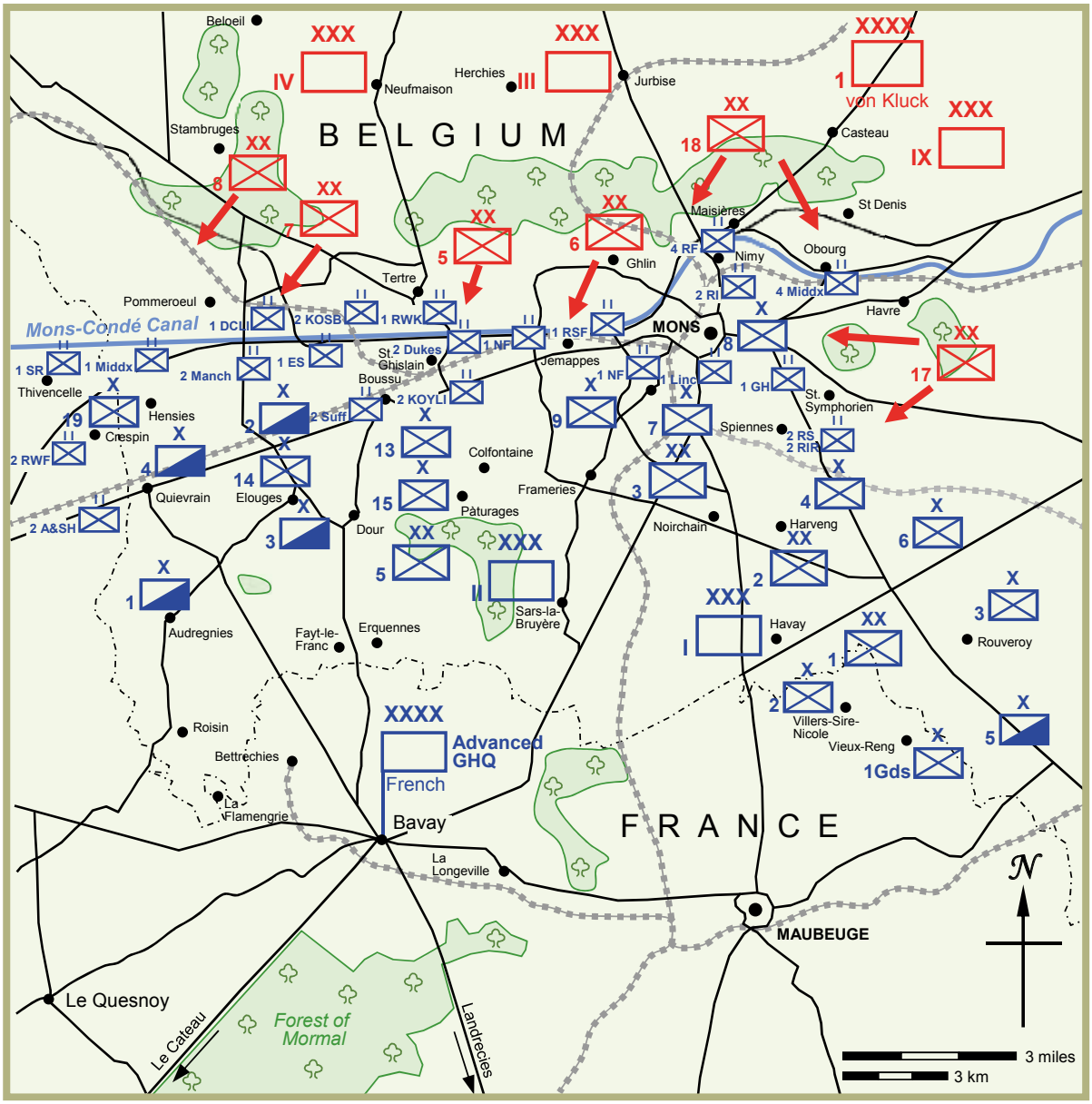
Although the BEF had withdrawn from Mons, it held firm immediately to the south and west, and was prepared to fight another day. Its position, however, was becoming increasingly precarious. When it became apparent late on 23rd August that the French Fifth Army had continued its retreat, it was clear to Sir John French that the BEF must conform. In any case, the BEF's western flank was in grave danger of being turned by II German Cavalry Corps.

Orders for withdrawal were given to the two British corps chiefs of staff at 0100 hours on the 24th at GHQ at Le Cateau, far to the south. The operation was not well

[6] Ibid., p. 205.

[7] This summary account of the BEF's deployment at Mons owes much to Richard Holmes, *Army Battlefield Guide: Belgium and Northern France* (London: HMSO, 1995) pp. 63-65.

[8] Quoted by Spencer Jones and Steven J. Corvi, '"A Commander of Rare and Unusual Coolness": General Sir Horace Lockwood Smith-Dorrien' in (ed.) Spencer Jones, *Stemming the Tide: Officers and Leadership in the British Expeditionary Force 1914* (Solihull: Helion: 2013) p. 159.



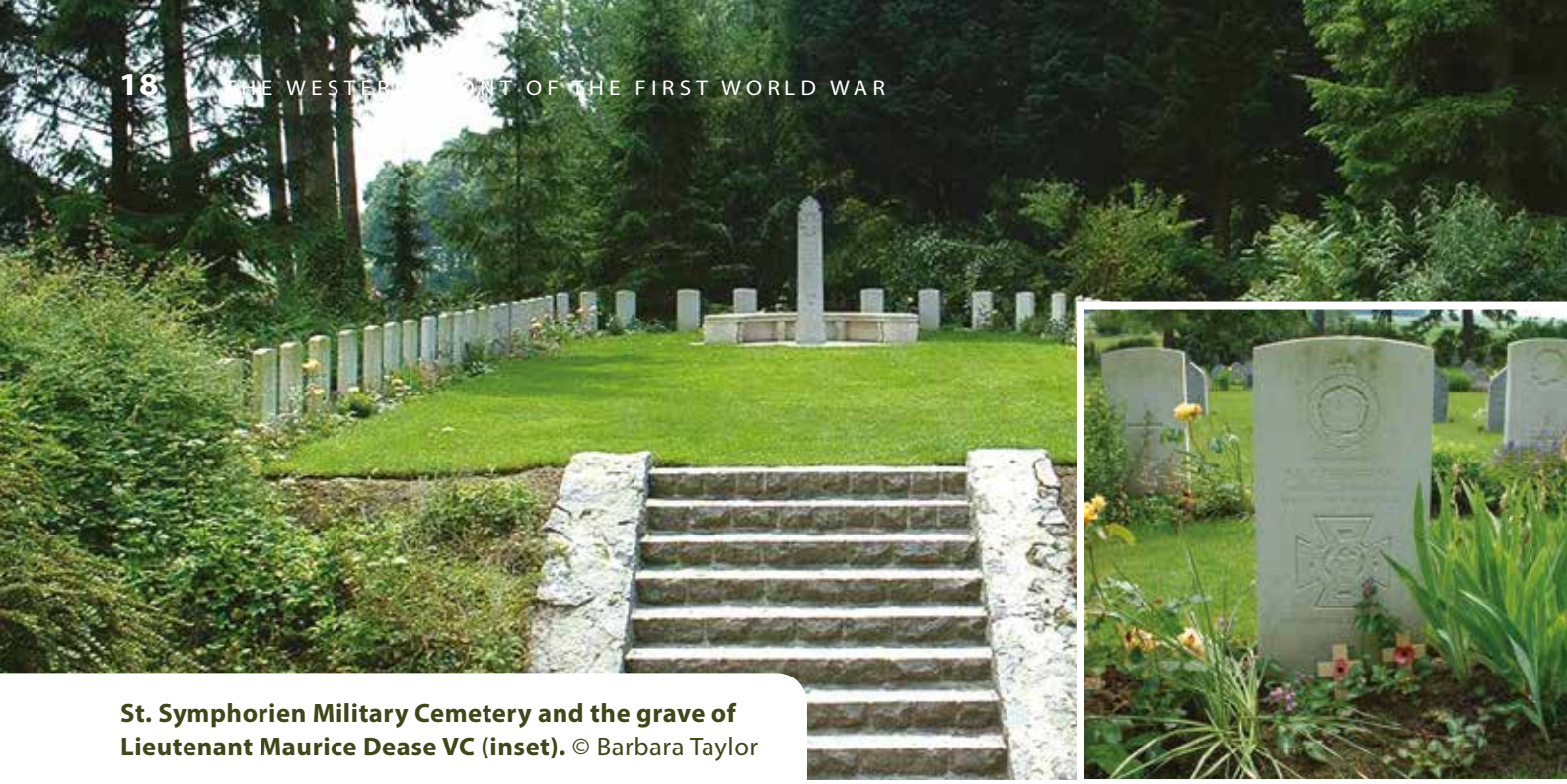
Map 1.2 – The Battle of Mons, 23 August 1914

planned. GHQ abrogated its responsibilities by requiring the corps commanders to work out all the details for themselves. While I Corps was able to break contact, II Corps had to withdraw under heavy German attack during the morning of 24 August. The retirement that day cost the BEF more casualties than the battle of Mons. Superior German forces now pursued their foe in a south-westerly direction. It would need calm, decisive British leadership and determination by all involved to prevent the retreat turning into a disastrous rout and ignominious defeat.

Commentary

For the Germans, the battle was little more than a troublesome engagement that caused but a day's delay to the great turning movement of the Schlieffen Plan, aimed at enveloping and defeating the French army. It was a confused battle, particularly around the city of Mons. Poor communications and intelligence hindered the staff work and decision-making on both sides. Air reconnaissance, while providing some valuable information, was still very much in its infancy. On the ground, both the British and German armies had to come immediately to terms with the realities of modern warfare, in which artillery, machine-gun and rifle fire would cause heavy casualties to troops advancing in the open.

Although outnumbered, out-manoeuvred and forced to withdraw, it is generally regarded that the BEF acquitted itself well at the tactical level. Units fought well. The Haldane reforms in the wake of the lessons learnt from the Boer War had produced a thoroughly professional fighting force (regulars and reserves), with great skill at



St. Symphorien Military Cemetery and the grave of Lieutenant Maurice Dease VC (inset). © Barbara Taylor

arms, albeit one dwarfed by the much larger French and German conscript armies. Serious deficiencies in British senior leadership, however, were to become even more apparent during the retreat from Mons. Neither Sir John French, nor his chief of the general staff, Major-General Sir Archibald Murray, was really up to the job. The latter would soon buckle under the strain. Moreover, the battle of Mons showed that no amount of tactical virtuosity can make good inherent strategic deficiencies. The BEF was a dangerously small army to be deployed in a major European war. It lacked critical mass, heavy artillery and agile operational command. Hence it was lucky to avoid destruction. There are surely pertinent lessons for today.

The Battlefield Today

The railway bridge over the canal at Nimy on the northern edge of Mons, on the right of the British position, is a good place to discuss the opening phases of the battle, particularly the actions of the 4/Middlesex and 2/Royal Fusiliers in the Salient, whose losses amounted to more than half the total number of BEF casualties on 23 August 1914. Another very important place to visit is the Commonwealth War Graves Commission (CWGC) cemetery at St. Symphorien, to the south-east of Mons. This cemetery – of German design – has a special significance: not only were the first and final British dead of the war buried here, but also in the fact that British graves lie alongside German ones.[9] It is for these reasons that St. Symphorien was selected as one of the principal places of commemoration on 4 August 2014 to mark the centenary of the start of the war for the United Kingdom and British Empire. A Belgian-British-German event was conducted here on that date.

Mungo Melvin

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Hew Strachan, *The First World War,* vol. I, *To Arms* (Oxford: Oxford University Press, 2001)

John Terraine, *Mons: The Retreat to Victory* (London: Macmillan, 1960)

[9] British graves include those of Private Parr of the Middlesex Regiment, killed on 21 August 1914; Lieutenant Maurice Dease VC, machine-gun officer of the 4/Royal Fusiliers, killed at the railway bridge at Nimy; and Private Ellison of the 5th Lancers, killed on 11 November 1918.

2. The Battle of Le Cateau
(26 August 1914)

Description	Allied	German
Senior Commanders	General Sir Horace Smith-Dorrien – II Corps	Colonel-General Alexander von Kluck – First Army
Principal Forces Engaged	**British Expeditionary Force** II Corps: 3rd & 5th Infantry Divisions 4th Infantry Division Cavalry Division (1st – 4th Brigades) **French Army:** I Cavalry Corps: 1st, 3rd & 5th Cavalry Divisions	**German First Army** III Corps: 5th & 6th Infantry Divisions IV Corps: 7th & 8th Infantry Divisions IV Reserve Corps: 7th Reserve Division II Cavalry Corps: 2nd, 4th & 9th Cavalry Divisions
Context	After three days of retreat following the Battle of Mons, II Corps turns and fights a delaying engagement against the pursuing Germans.	After three days of pursuit, German forces encounter British troops in defensive positions and fight a fierce engagement.
Casualties	7,812	8,970 (?)[1]
Consequences	Although forced to retire by mid-afternoon, the British stand checks the German pursuit and allows II Corps to break contact with German First Army.	German attacks force the British retirement by mid-afternoon, but the chance to encircle and destroy a substantial portion of the BEF is lost. Germans forces are so bloodied that they halt on the battlefield overnight and lose contact with British II Corps.

Introduction

British II Corps had been dogged by the German pursuit following the Battle of Mons (23 August). Bloody rearguard fighting at Audregnies (24 August 1914) had deflected a German attempt to encircle 5th Division, but von Kluck's First Army had continued to press the retreating British throughout 25 August. Seeking to break contact with the enemy, General Sir Horace Smith-Dorrien made the risky decision to turn and fight on 26 August. The stakes were high. Victory would buy vital time and space with which to withdraw and rejoin I Corps, but defeat could result in the destruction of over half of the British Expeditionary Force.

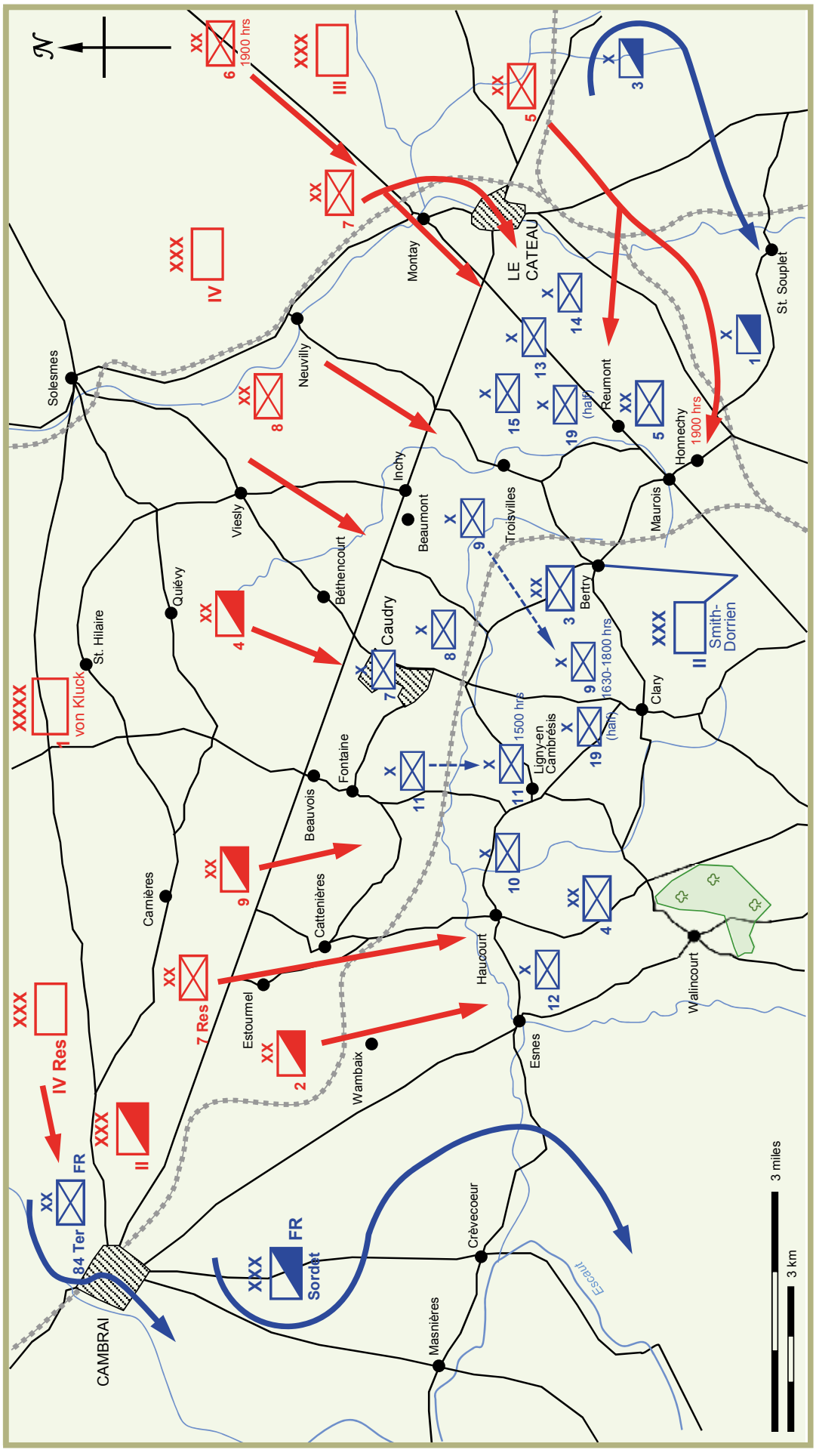
Deployment

On 25 August, II Corps had undertaken a forced march in scorching weather in an attempt to gain distance from the German First Army. By the early evening II Corps had reached the area west of the town of Le Cateau. Here they found the fresh troops of 4th Division, which had arrived in France on 22-23 August. Major-General Thomas Snow, commanding this Division, noted of II Corps that its men 'had been retreating and fighting for 36 hours, and that they had had about as much as any troops could stand.'[2]

Field-Marshal Sir John French had ordered II Corps to continue the retreat at dawn the next day. The retirement was to be covered by Major-General Edmund Allenby's

[1] Much German archival paperwork was destroyed during a bombing raid in the Second World War which makes establishing accurate casualty figures problematic. However, a detailed British study produced in the 1930s when the paperwork was still available gives a figure of 8,970 Germans killed and wounded. See War Office, *Battle of Le Cateau, 26 August 1914: Tour of the Battlefield* (London: HMSO, 1933), p.31.

[2] Quoted in Spencer Jones and Steven J. Corvi, '"A Commander of Rare and Unusual Coolness": General Sir Horace Lockwood Smith-Dorrien' in Spencer Jones (ed.), *Stemming the Tide: Officers and Leadership in the British Expeditionary Force 1914* (Solihull: Helion, 2013), p.162.



Map 2.1 – The Battle of Le Cateau, 26 August 2014

Cavalry Division. However, at 2300 hours Allenby reported to Smith-Dorrien that his tired and disorganised horsemen could not guarantee an effective rearguard for the next day unless II Corps marched under cover of darkness. This alarming revelation prompted Smith-Dorrien to assemble a crisis conference at 0200 hours. Having heard that his men were too exhausted to march during the night, Smith-Dorrien resolved to turn and deal a 'stopping blow' to the pursuing Germans before retiring under the confusion caused by the battle.[3] His subordinates supported the plan. Allenby and Snow both agreed to place their divisions under Smith-Dorrien's command for the coming engagement.

Smith-Dorrien communicated his intentions to Field-Marshal Sir John French and GHQ during the early hours. French was awoken to receive the news and initially gave a vaguely positive reply, which approved the decision to fight whilst emphasising the importance of continuing the retreat. However, by 0630 hours French had changed his mind and urged Smith-Dorrien to withdraw immediately. But by now the battle had begun and it was too late to alter plans.

II Corps, reinforced by 4th Division and elements of the Cavalry Division, occupied a line of approximately 10 miles: 4th Division on the left, 3rd Division in the centre and 5th Division on the right. Le Cateau itself marked the far right of the British position. The cavalry was held in reserve, except for Brigadier-General Hubert Gough's 3rd Brigade, which had slipped away from divisional control and operated independently and largely ineffectively on the right flank. The French cavalry of General Sordet's I Cavalry Corps screened the western flank, but the eastern flank was dangerously exposed. Smith-Dorrien had requested that Lieutenant-General Sir Douglas Haig's I Corps march to support him on this flank, but Haig, unwell and uncertain of the overall situation, declined the request.

The battlefield at Le Cateau was described by one veteran as 'Salisbury Plain without the trees'.[4] The ground was defined by gently rolling hills and open fields, intersected by a jumble of small roads and dotted with a handful of farming villages. In places there were hastily constructed trenches, some of which had been dug by French civilians the previous day, but on other parts of the front the British fought in the open.

Controversially, the artillery of 5th Division was pushed forward to occupy front line positions alongside the infantry. Several batteries of 3rd Division did the same, although the gunners of 4th Division chose concealed positions further to the rear. The reasoning behind this decision remains open to debate. The most charitable explanation is that the CRA of 5th Division, Brigadier-General John Headlam, took a very literal interpretation of the gunner credo that stated 'the greater the difficulties of the infantry, the greater should be the support of the artillery' and genuinely believed that this could best be achieved from the front line. The wisdom of this approach is debatable and it would cost the Royal Artillery a high price in lives and equipment.

The Battle

The German attack began on the left, as the horsemen and jaeger (light) infantry of II Cavalry Corps clashed with 4th Division. The sudden arrival of German forces caught the 1/King's Own by surprise and the battalion was flayed by machine gun fire, suffering over 400 casualties in a matter of minutes. Yet from this low point the battle on the left began to incline in the favour of the British. II Cavalry Corps found itself drawn into a bitter dismounted engagement and lost sight of its primary objective of turning 4th Division's flank. The British fought stubbornly, giving ground when necessary and ultimately fighting the Germans to a standstill. The few German attempts to extend the battle westward were beaten off by the French I Cavalry Corps.

However, the story was very different on the right flank. At dawn a powerful concentration of German artillery had unlimbered approximately 3800 yards from 5th Division's position. This artillery group bombarded the British line for the next four hours. The fact that 5th Division's guns were deployed alongside the infantry allowed the Germans to concentrate all their fire on the front line with devastating effect. At 1000 hours German infantry began to advance against 5th Division. Initial attacks were beaten back, with the close support from the surviving artillery batteries proving especially valuable. However, the Germans continued to press forward and gradually began to lap around 5th Division's exposed right flank. Relentless bombardment and increasing enfilade fire from the east exacted a severe toll on this British division.

[3] Ibid., p.163.

[4] Quoted in David Ascoli, *The Mons Star* (Edinburgh: Birlinn, 2001), p. 97.

Staff Conference of the Battalion officers of the 1st Cameronians before Le Cateau. © IWM Q51480

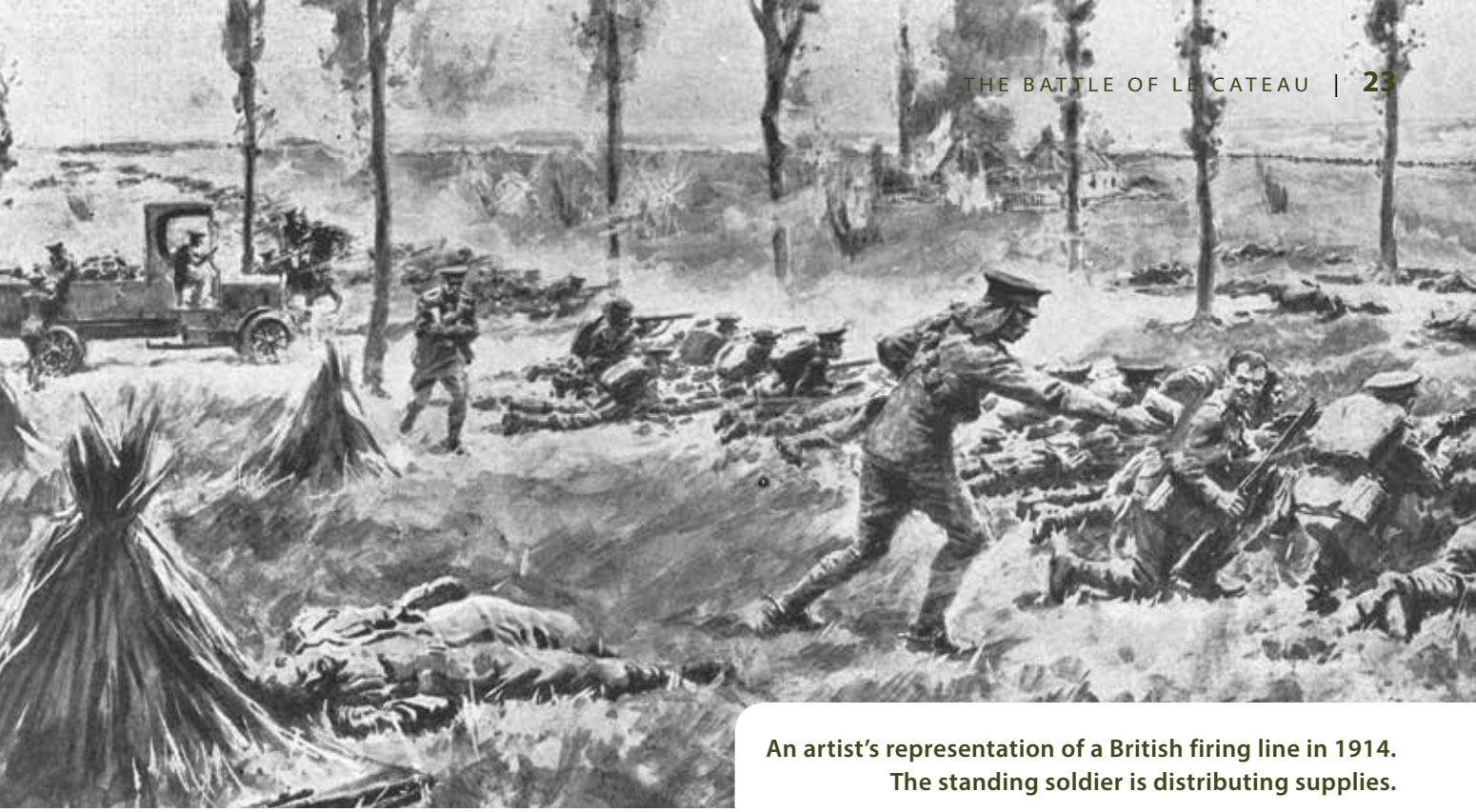
By early afternoon the growing pressure on the right flank was making the position untenable and Smith-Dorrien decided to disengage. British forces fell back between 1330 and 1500 hours. Disengaging in broad daylight was difficult. Not all units received the order to withdraw and several battalions were unfortunately left behind. On other parts of the front there were isolated incidents of panic, whilst losses amongst men and horses made the extraction of 5th Division's guns a herculean challenge. Nevertheless, given the risks involved, the disengagement proceeded remarkably smoothly. This was attributable to two factors. First, the battalions that had not received withdrawal orders continued fighting and thus attracted disproportionate German attention; secondly, the Germans were too bloodied and exhausted to mount any form of pursuit.

By 1800 hours the Germans were left as masters of the battlefield. Von Kluck despatched his cavalry in a westerly direction due to the mistaken belief that the British would fall back to Calais. The rest of his army spent the night licking its wounds and did not move off until the following day. However, by now all contact had been lost with the retreating British. Von Kluck contented himself by reporting, erroneously, that he had destroyed the entire BEF plus several French divisions. In reality the British were marching away to relative safety. II Corps retreated throughout the night and following day. The formation was severely disorganised and would not begin to regain its shape until 28 August. Many battalions were hopelessly intermingled. Officers and men were exhausted by the relentless combination of hard fighting and forced marching. Yet crucially they had escaped their pursuers.

Commentary

The Battle of Le Cateau was the critical engagement of the Great Retreat from Mons. There is some debate as to who won the battle. Whilst the Germans drove the British from their positions, Smith-Dorrien's force achieved its operational objective of stopping the German pursuit and buying precious time with which to withdraw. Mastery of the battlefield availed von Kluck nothing, for the check to his First Army was so severe that the Germans lost contact with II Corps and never regained it. However, John French and GHQ took a dim view of the battle and came to the erroneous conclusion that II Corps had been effectively destroyed. French never forgave Smith-Dorrien for the decision to turn and fight. The resentment would simmer over the following months before culminating in French's abrupt dismissal of Smith-Dorrien in May 1915.

Both sides suffered heavy losses at Le Cateau. The damage to the Royal Artillery was especially grave. 38 guns were abandoned on the battlefield. The battle proved beyond doubt that deploying artillery in the open against a superior opponent invited certain destruction. The British would not make the same mistake again. Although the British once again proved their tactical strengths and professional tenacity, the battle gave a clear demonstration of the formidable power of German artillery and machine guns. Elements of the British deployment can be criticised. Aside from the controversial placement



An artist's representation of a British firing line in 1914. The standing soldier is distributing supplies.

of artillery batteries, some battalions were pushed too far forward and the army as a whole showed a tendency to occupy positions with the best fields of fire even if this resulted in undue exposure to German artillery. However, any criticism must be moderated by the fact that II Corps was forced to take up defensive positions at very short notice and in the hours of darkness.

The engagement also revealed many of the problems of battlefield communication. Smith-Dorrien initially controlled the battle from the town of Bertry, but the civilian telephone system had collapsed by mid-morning. Communications with 5th Division were rendered precarious when the divisional signals section was wiped out. Ultimately, Smith-Dorrien was forced to ride forward to communicate with 5th Division's General Officer Commanding, Major-General Charles Fergusson, in person. A breakdown in communications between formation headquarters and the front line was the root cause of the failure of some battalions to withdraw in a timely manner.

The Battlefield Today

The Suffolk Memorial marks the position held by 2/Suffolk of 5th Division. This is an ideal place at which to tell the story of the battle on the right flank. The hill offers a fine view of both 5th Division's position and the ridge where the Germans emplaced the bulk of their artillery. The Suffolks were ordered to fight to the last man and did not receive orders to withdraw. As a result the battalion was virtually destroyed, but its sacrifice helped the rest of 5th Division to escape the same fate.

Spencer Jones

The Suffolk Memorial, Le Cateau.
© Northumberland Gunner

Le Cateau Battlefield: This lone tree was used as a marker by German artillery and 15th Brigade had its HQ in the sunken lane: orders were given to cut the tree down but the 1st Norfolks did not manage the job before they were ordered to withdraw. © Mike St. Maur Sheil/FieldsofBattle1418.org

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3. The First Battle of the Marne
(5 – 12 September 1914)

Description	Allied	German
Commanders-in-Chief	**French Army** – General Joseph Joffre at GQG (French GHQ) **British Expeditionary Force** – Field-Marshal Sir John French	**German Army** – General Helmuth von Moltke the Younger
Principal Forces Engaged	**Allies** French Fifth Army – General Louis Franchet d'Espèrey French Sixth Army – General Michel-Joseph Maunoury French Ninth Army – General Ferdinand Foch Military Governor of Paris – General Joseph Gallieni British Expeditionary Force	**German Army** First Army – Colonel-General Alexander von Kluck Second Army – Colonel-General Karl von Bülow Third Army – Colonel-General Max von Hausen
Context	The French Army and the BEF had been pushed out of Belgium and Paris (and France as a whole) was in acute danger.	After significant successes in the Battle of the Frontiers, the German army is now bearing down on Paris.
Casualties	87,000 killed, wounded and missing.	99,000 killed, wounded and missing.
Consequences	The Allies halted the German advance into France and then pursued the German Army up to the Aisne river. The 'race to the sea' would result, ending in a line of entrenched positions from Flanders to Switzerland.	After Moltke had a nervous breakdown, his staff ordered the German armies to retreat to positions on the Aisne river. It was now clear that the Germans would not win a quick war in the West by enveloping the French army and capturing Paris.

Introduction

Having taken disastrous casualties in the opening battles of the war, the French army was reeling by the end of August 1914. Its left wing had been engaged in a pell-mell retreat from Belgium after the Battle of Charleroi, 22 August 1914. Only the Battle of Guise (29-30 August), known as the Battle of St. Quentin to the British, where the French Fifth Army had briefly halted its retreat to inflict a sharp, tactical reverse on the German Second Army, had suggested that French troops, when properly led, could match their opponents. After this minor setback for the Germans, the Allied forces continued their long retreat south, closely pursued by the German army still intent on enveloping Paris and inflicting a war-ending defeat on the Allies in the West. As the Allied general withdrawal continued, the danger to Paris became acute.

After warnings from the French commander-in-chief General Joseph Joffre, the French government was evacuated to Bordeaux on 2 September, leaving General Joseph Gallieni to defend the capital with some territorial divisions and the rapidly reinforced formations of General

Michel-Joseph Maunoury's Sixth Army. However, rather than concentrate on capturing a very exposed Paris, the German Army's commander-in-chief, Helmuth von Moltke, on 30 August had already decided to shift the axis of his advance, so abandoning the concept of enveloping Paris, in order to bring about a decisive battle with the weakened French army and the BEF east of the capital.

Planning and Deployment

As the Germans swept down towards the river Marne and the Allied armies, Moltke's intentions remained unclear to Joffre because the positions of much of the German army were still unknown to the French; on 2 September, for example, German Second Army's location was the cause of considerable concern. In relation to the German First Army, aerial reconnaissance and other intelligence reports had suggested it was moving south-eastwards, but there were also conflicting reports of its cavalry heading towards Paris.

Prior to this situation, Joffre had seen the opportunity to draw the Germans into an area between Paris and Verdun, into which he could launch a large-scale counter-attack. He planned a general offensive along almost the entire front, with the Paris garrison attacking the right flank of the German army. However, these plans could not be finalised until it was clear that the Germans would be advancing away from Paris. Joffre was well aware of the parlous and exhausted state of his troops, which required that any counter-attack would have to be carefully prepared and planned, and that another serious reversal such as Charleroi would lead to disaster.

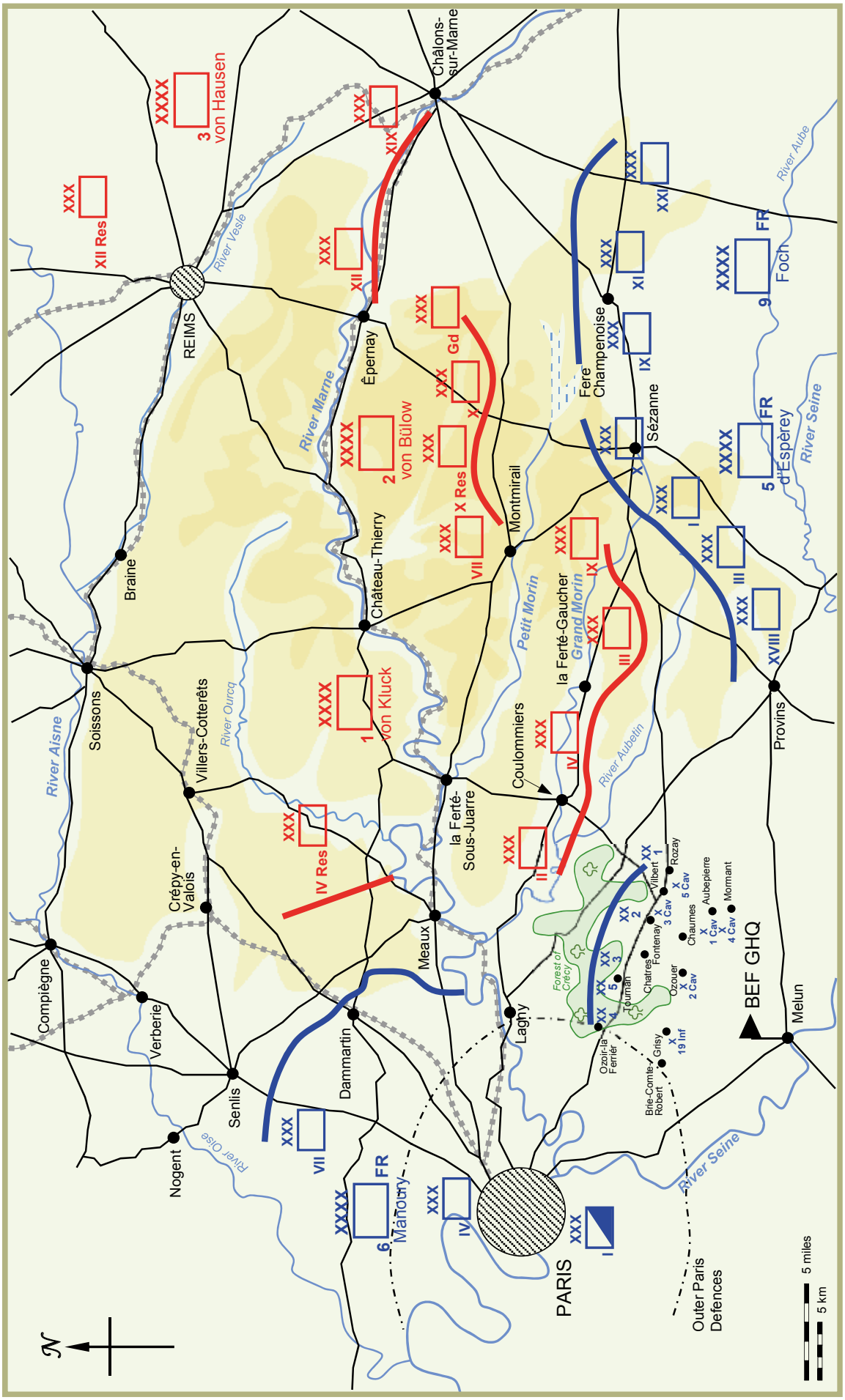
Despite some evidence that suggested von Kluck's First Army was turning towards the south-east (and thus away from Paris), Gallieni continued to press Joffre for the three corps that the government had promised him. On 4 September, Joffre instructed Gallieni to order Maunoury's Sixth Army to ready itself for an eastwards attack on the German right flank, while the staff at GQG (French GHQ) debated the best time to launch the general offensive. It was decided that the counter-offensive would require the French Sixth and Fifth Armies, along with the BEF, to strike the German army's right flank, which contained the German First and Second Armies. Joffre was concerned that the weakened state of the Fifth Army and the BEF might prevent them from conducting this manoeuvre, but Franchet d'Espèrey and Henry Wilson met to agree that their armies, although battered, would be able to move and fight. Yet there was continuous pressure on Joffre from Gallieni to launch the counter-offensive as soon as possible, as the latter became increasingly concerned that the Germans would be alerted to Maunoury's advance towards their open flank.

In the end, Joffre recognised the wisdom of this assessment and on the night of 4 September orders went out from GQG for the attack on the German flank with Ferdinand Foch's detachment becoming Ninth Army, shoring up the right of Fifth Army. While the French Fifth and Sixth Armies, together with the BEF, attacked the German Army's right flank, Ninth, Fourth and Third Armies would also advance with the intention of putting pressure on German forces across the entire front, thus preventing German reinforcement of their threatened, western flank.

The Battle

The first engagement of the battle occurred when Maunoury's troops encountered German IV Reserve Corps (the right flank corps of German First Army), as the former advanced to a location northeast of Meaux in the afternoon of 5 September. The French were unable to dislodge the Germans from their positions but the latter withdrew that night to stronger position to the east. The following day, French aerial reconnaissance showed that German reinforcements were heading northwards; on 6 September von Kluck had ordered first II Corps and then IV Corps to reinforce IV Reserve Corps as it struggled to contain the French Sixth Army. The remaining corps of the German First Army (III and IX) were initially ordered to retire that evening, but then von Kluck changed his mind and directed them towards the rest of First Army, north of the Marne. Thus von Kluck was able to stabilise the situation of IV Reserve Corps, with Maunoury unable to advance over the river Ourcq, but at the expense of leaving an increasingly wide gap between his left flank and German Second Army.

Although von Kluck's decision to shift his entire army northwest appears to be puzzling in retrospect, it was taken for what appeared to be sound operational reasons at the time. The Germans had been constantly concerned about their right flank being struck by the Allies. Recent (false) news had suggested that the British were landing significant numbers of troops on the Belgian coast, threatening the rear of the entire German army. In conjunction with information from *Oberste Heeresleitung* (OHL, the German High Command) that the other German armies were meeting such strong resistance that a general withdrawal might be necessary, von Kluck was arguably justified in thinking his right flank had to be secured at all costs.



Map 3.1 – The First Battle of the Marne, 5-12 September 1914

However, by moving two corps to his right flank and by leaving a sparsely manned gap of 50 kilometres between his left flank and that of von Bülow's Second Army, von Kluck allowed the French Fifth Army a much easier advance than it had expected; on 6 September the French were able to press forward nearly five kilometres. The Fifth Army continued its advance without much hindrance from the Germans, as von Kluck continued to pull troops north, until the French encountered enemy formations from the German Second Army's right flank. After a difficult fight across the river Petit Morin, the French advance forced von Bülow to withdraw his forces on this exposed flank in a north-easterly direction.

Although the BEF had made an uneventful advance during the opening days of the battle, on 8 September it ran into determined German opposition on the banks of the Petit Morin. After serious fighting, the British were able to force their way across the river and, by the following day, British cavalry had seized a number of bridges across the Marne. The British bridgehead allowed the French Fifth Army rapidly to cross the river, forcing both von Kluck and von Bülow to order a general withdrawal.

The French army's centre and its right flank had been put under considerable pressure while the left flank had been fighting. In fact, on 7 September, the German Third Army had almost forced its way between the French Ninth and Fourth Armies with Foch's Ninth Army in particular seeing some very heavy action. However, the withdrawal of the German Second Army on 9 September compelled the Third Army to its east to conform and soon the entire German army was in retreat northwards.

By the evening of 9 September 1914, it was clear that the Allied counter-offensive had succeeded. The Germans would spend the next four days retreating to positions along the river Aisne. In this manner, the threat to Paris and the possibility of the Germans achieving a swift end to the war through a decisive victory on the Western Front had now passed.

Charge of French infantry, 1914. © NAM

Casualties

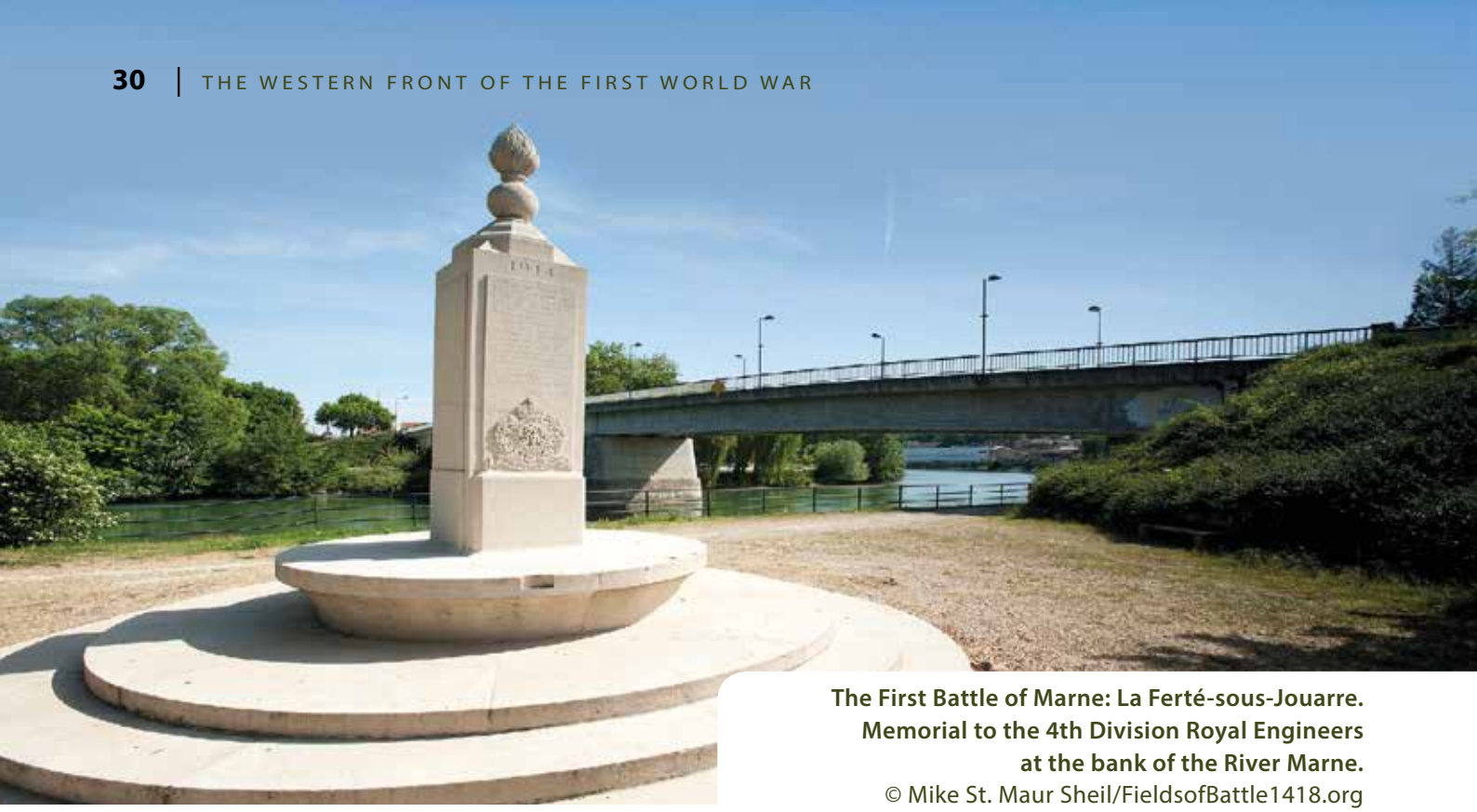
It is not possible to identify exactly how many casualties the First Battle of the Marne cost the Germans and the French, as neither published specific losses for the battle. The Canadian historian Holger Herwig has estimated that the French lost approximately 85,000 men killed, wounded and missing during the ten days of battle, with the Germans losing 99,000 men during the same period. To some extent these casualty figures are misleading because many of the units on both sides that were engaged in the heaviest fighting took very serious losses indeed; for example, the German IV Reserve Corps had 4,200 casualties in the battle. The BEF lost just under 2,000 men according to the British Official History.

Commentary

The First Battle of the Marne illustrates many important military principles. While the Allied forces were in some considerable disarray during the great retreat, the German armies were also increasingly exhausted. Their condition underlines the value of Clausewitz's concept of 'friction' – if there is a chance of something going wrong, it will – and also the notion of 'culmination': after a climax of activity each successive effort becomes weaker. With every kilometre they advanced into France, the Germans added a kilometre to their ever-extending lines of communications from their railheads in Germany.[1]

The command style of von Moltke was in sharp contrast to that of Joffre. While the former remained distant from his commanders and their armies, the French commander made a point of going forward to consult with his senior commanders at every opportunity. This approach was to have a major effect on the battle as Joffre was able to coordinate the actions of the Allied armies most effectively while Moltke to all intents and purposes lost control of the battle, relying on his army commanders to coordinate their actions with each other, which they largely failed to do, not least on account of poor communications.

New technical capabilities were also available to the commanders, which the French took advantage of but



The First Battle of Marne: La Ferté-sous-Jouarre. Memorial to the 4th Division Royal Engineers at the bank of the River Marne.
© Mike St. Maur Sheil/FieldsofBattle1418.org

the Germans did not. Crucially, the French were able to pinpoint the positions of the German armies by two novel means: through air reconnaissance and from intercepts of German radio traffic.

The Battlefield Today

As the battle encompassed a great deal of territory, it is only possible to give a few suggestions as to noteworthy sites. The town of Viller-Cotterêts, south-west of Soissons, has many interesting places to visit, including the Guards' Grave Cemetery (associated with a spirited rear-guard action by elements of 4th (Guards) Brigade on 1 September 1914) and a French national cemetery.[2] At Mondemont, there is a stunning French memorial called the National Monument to the Victories of the Marne; it is over 30 metres high and took five years to complete. There is a small museum devoted to the battle in the village below.

The impressive La Ferté-sous-Jouarre Memorial commemorates the 3,740 officers and men of the British Expeditionary Force (BEF) who fell at the battles of Mons, Le Cateau, the Marne and the Aisne between the end of August and early October 1914 and have no known graves. Close to the bridge on both banks of the river stand the stone columns of the 4th Division Royal Engineers Memorial, marking the spot at which the Royal Engineers constructed a floating assault bridge under German artillery fire on 9-10 September 1914.[3]

Tim Gale

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The British, German and French Official Histories all contain extensive material on the First Battle of the Marne.

[1] Editor's note. At some stage in a battle the balance of advantage may shift from the attacker to the defender; the art of generalship is to predict when and where this will happen, and then to act on such an assessment of the situation expeditiously, seizing the initiative. Thus Joffre's triumph was to exploit the German faltering momentum to Allied advantage. A similar situation occurred at the Second Battle of the Marne in 1918, when the Germans over-extended themselves – see Chapter 25. The operational technique of drawing an attacker into an area, allowing him to over-extend to a point of culmination and then counter-attacking with unexpected force, timing and direction was demonstrated also during the Second World War, notably by Manstein in his famous 'backhand-blow' towards Kharkov in February 1943.

[2] For details, see http://www.cwgc.org/find-a-cemetery/cemetery/63901/Guards%20Grave,%20Villers%20Cotterets%20Forest

[3] Details taken from http://www.cwgc.org/find-a-cemetery/cemetery/79100/LA%20FERTE-SOUS-JOUARRE%20MEMORIAL

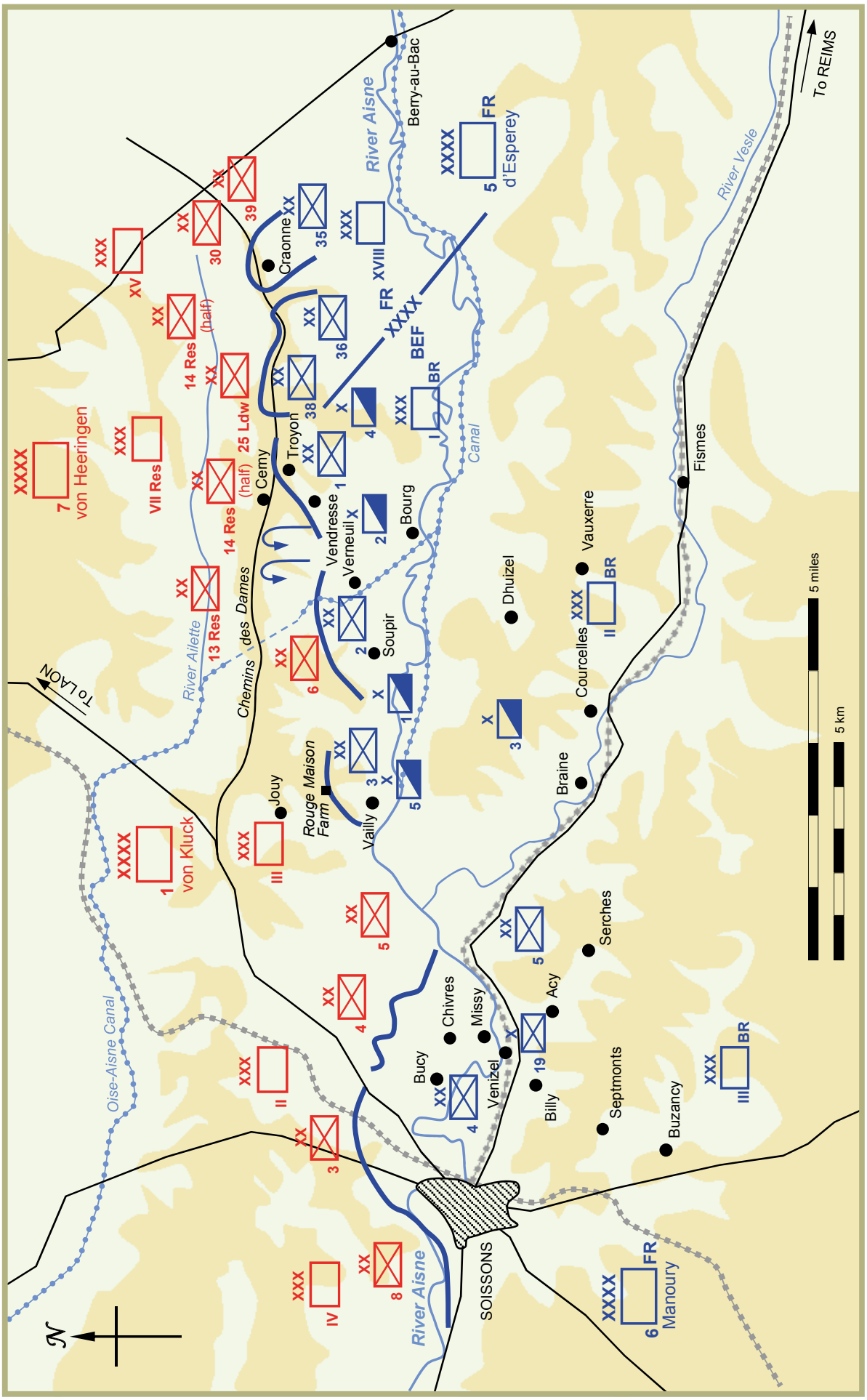
4. The First Battle of the Aisne
(12 September – 15 October 1914)

Description	Allied	German
Commanders-in-Chief	Field-Marshal Sir John French	Colonel-General Alexander von Kluck, First Army General of Infantry Johann 'Hans' von Zwehl, VII Reserve Corps Colonel-General Karl von Bülow, Second Army
Principal Forces Engaged	**British Expeditionary Force** I Corps 1st & 2nd Divisions II Corps 3rd & 5th Divisions III Corps 4th Division Cavalry Corps **French Army:** Fifth Army Sixth Army	**Elements First Army** VII Reserve Corps, Seventh Army Elements Second Army
Context	An advance from the Marne against troops thought to be the rear guards of the retreating German army.	German decision to halt their retreat from the Marne.
Casualties	British: ca. 13500; French: not known	Germans: not known
Consequences	'Race to the sea' and the transfer of the BEF north to Flanders.	Germans stabilise position on the Aisne and halt their general withdrawal.

Introduction

By the end of the first week of September 1914, the grand German offensive operation (the Schlieffen-Moltke Plan) to overwhelm the French in the first six weeks of the war had failed. Their right hook through Belgium and Northern France had brought their armies tantalisingly close to Paris, but they had not been able to envelop, let alone defeat, the French army and the BEF. The German troops had become over-extended and exhausted by the time they reached the river Marne. Between 5 and 10 September the Allies counter-attacked, with the BEF advancing into the gap between the German First and Second Armies, covered merely by German cavalry. Helmuth von Moltke, the Chief of Staff of the German Supreme Army Command (the *Oberste Heeresleitung* (OHL)) ordered a withdrawal. The Germans fell back with the Allied armies moving forward in a cautious pursuit.

At this early stage of the conflict many Allied soldiers were optimistic, thinking that the decisive battle had been fought and in consequence the war nearly won. The Germans were concerned about their troops' morale and the threat to their open right wing. Von Moltke and his subordinate army commanders hoped to find a firm position at which they could halt their troops, recover and continue the campaign. Yet German command and control was hampered by poor communications and hence insufficient coordination between von Moltke in



Map 4.1 – The First Battle of the Aisne, 12 September –15 October 1914

Luxemburg and von Kluck commanding the First Army and von Bülow commanding the Second, to whom von Kluck was nominally subordinated. The Aisne would prove a good battlefield on which to stand and fight, as long as the Allies could be prevented from exploiting vigorously the yawning gap between their armies. The forthcoming battle would prove a classic military race of forces, time and space, and one of missed opportunity on the Allied side.

The Battlefield

The Aisne valley is around three kilometres wide and lies between chalk plateaux to the north and south. The ridge to the north is known as the Chemin des Dames after the name given to the lateral road running 27 kilometres across its summit from Vauxrains to Corbeny. North is the valley of the Ailette stream. The summit of the Chemin des Dames is a plateau with open farm land. The edge of the valley is intersected with wooded high spurs and re-entrants. This lie of the land obstructs observation from the valley to the plateau, and between troops operating in the re-entrants.

Deployment

The Germans were falling back in front of the French and British armies with a 30 kilometre void opening up between the German First Army in the West, facing the French Sixth Army and part of the BEF, and the Second Army opposing the French Fifth Army in the East. The intervening sector was screened by only three cavalry divisions. Following its capture of Maubege, the German VII Reserve Corps, under the 1870 war veteran General Hans von Zwehl, marched to deploy between the two German armies and so seal the gap. It reached the north bank of the Aisne on 13 September 1914, where it would come under command of Seventh Army. The German defenders hastily dug trenches on the high ground north of the Aisne, where they could deploy in a strong firing line with open fields of fire. Engineers demolished the bridges covered by rearguards in the Aisne valley.

The BEF advanced cautiously on 11 September, but on the following day the BEF's infantry divisions marched very hard between 24 and 32 kilometres through heavy rain, cold wind and without food.

The Battle

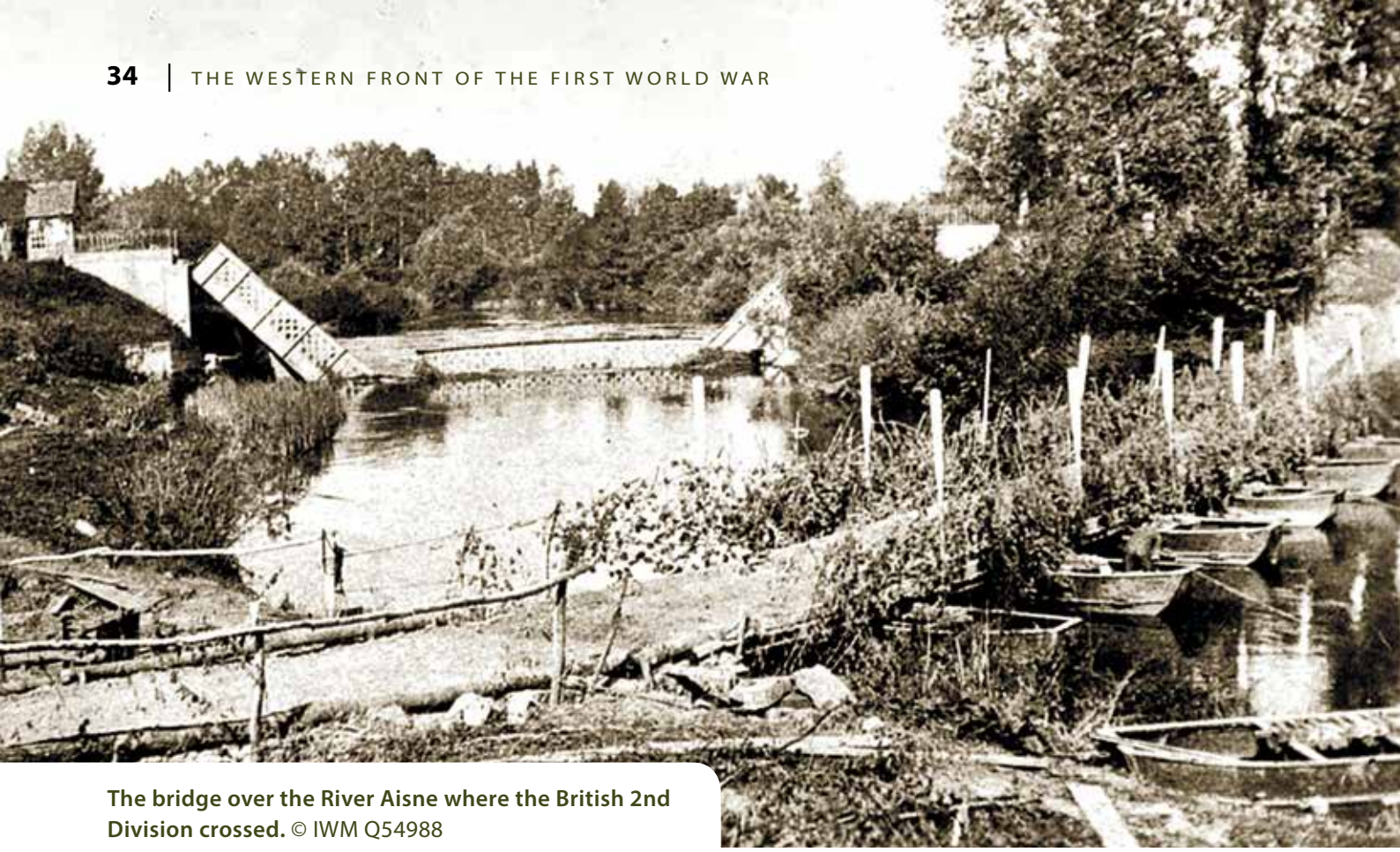
At 1445 hours on 12 September, BEF GHQ received Joffre's orders to the French Fifth and Sixth Armies to cross the Aisne, with the latter to try to outflank the Germans to the left. Joffre requested the BEF to capture the Chemin des Dames ridge. The resulting battle is best explained in the following stages.

12-13 September 1914: Forcing the Aisne. During the course of 12 September British cavalry patrols had reached the river Aisne to find that most of the bridges over the Aisne river and Aisne canals had been demolished. However, at Venizel Bridge, a single girder remained intact. Brigadier Hunter Weston,[1] commander of 11th Infantry Brigade of 4th Division (III Corps), had been ordered to attack at daybreak. But after discovering that the German trenches north of the bridge appeared not to be occupied, he ordered his tired and hungry troops to cross the rickety structure in single file and make a night attack, without any prior reconnaissance to seize the ridge line dominating the crossing. 11th Brigade caught the Germans by surprise and had established a bridgehead on the edge of the plateau north of Venizel by dawn on 13 September. The 4th Division Cycle Company also crossed the river at Missy.

Meanwhile, on 13 September I and II Corps approached the Aisne and established crossings in a number of locations after fights with German outposts and under artillery fire. In several places German demolitions were incomplete allowing the British infantry to scramble across the river. The Royal Engineers constructed bridges under artillery fire and observation. The British discovered that the German positions on the ridge of the Chemin des Dames were out of range of their guns deployed on the plateau south of the river, while the flat trajectory of the 13- and 18-pounder field guns meant that they could not engage the Germans from the valley bottom. The BEF lacked sufficient howitzers of the necessary calibre and range. As a result, British field artillery was deployed forward into exposed positions. The Germans, far better equipped with howitzers, were able to engage the attacking British from artillery positions behind the Chemin des Dames.

14 September 1914: The Battle of the Aisne. The British attacked the German positions on the Chemin des Dames Ridge from the bridgehead of I Corps and that of II and III Corps. The weather in the valley was misty, which hampered the gunners, who lacked sufficient quantities of telephones and cable (line) at this early stage of the war. The British Official History commented that the battle was 'a literally uphill contest, without much artillery support, which came piecemeal onto the battlefield to the assistance of the advance guards already across the Aisne'. It characterised the fighting as a close quarter combat such as that undertaken at Waterloo or Inkerman in poor visibiity, but with troops advancing in open order and

[1] He went on to command 29th Division at Gallipoli and VIII Corps at the Somme (see Chapter 12).



The bridge over the River Aisne where the British 2nd Division crossed. © IWM Q54988

in small parties and firing mostly lying down or behind cover. This stage of the battle comprised actions at Soupir, Verneuil and Troyon by I Corps; by II Corps at Chivres, Rouge Maison Farm, Jouy Spur and la Fosse Marguet. Troops of I Corps reached the summit of the Chemin des Dames north of Troyon and the Germans counter-attacked with particularly heavy fighting around the Sugar Factory at Troyon. In contrast, attacks by II Corps fared less well. III Corps, however, did not attack. The General Officer Commanding of 4th Division, the sole division in the corps, decided that owing to the impossibility of receiving adequate artillery support, he was not justified in attacking the strongly entrenched German position. That evening the divisions of the BEF dug in to protect their modest gains against fierce German counter-attacks. The BEF suffered 12,500 casualties on 14 September. A notable event this day was the replacement of Helmuth von Moltke by Erich von Falkenhayn.

15 September – 15 October 1914: The Start of Trench Warfare. The British made some further attacks on 15 September, and the Germans also counter-attacked to drive the British and French from their bridgeheads. These attempts failed against troops in entrenchments supported by reserves and artillery. Over the next month many techniques associated with trench warfare were first used on the Western Front, including sniping and raids. Two Royal Flying Corps officers pioneered the use of aircraft for artillery observation. Field-Marshal Sir John French wrote to King George V that he suspected that the battle of the Aisne would be typical of future operations and that the spade would become as important as the rifle. Seven Victoria Crosses were awarded for acts of gallantry during the battle.

Subsequent Operations. During the next month the German and Allied armies redeployed their forces on the open north-western flanks in what became known as the 'Race to the Sea'. In October 1914 the BEF redeployed to

Machine guns positions of the 1st Battalion, Cameronians (Scottish Rifles) at St. Marguerite, 19 September 1914. © IWM Q015498

[2] See Chapter 22.

Troops of the 1st Battalion, The King's Own (Royal Lancaster Regiment), 12th Brigade, 4th Division, in the front trench at St. Marguerite, 22nd September 1914. © IWM Q015499

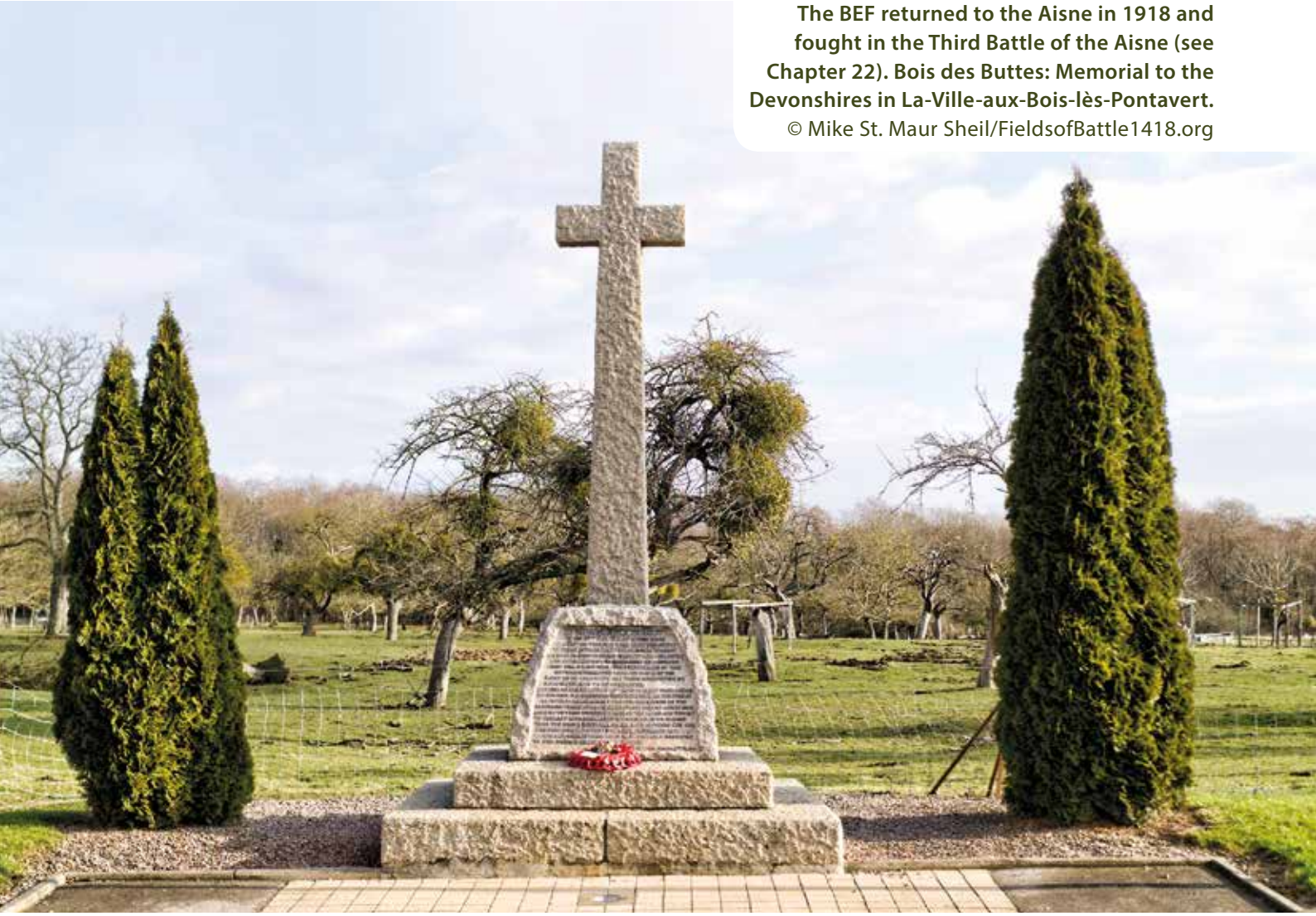
the left of the French armies, close to the Channel coast ports, taking them to Flanders.

A British corps (IX) returned to the Aisne in May 1918 to recuperate and rebuild after suffering in the battles of March and April 1918. It was tasked to defend the Chemin des Dames. Unluckily, this position put it directly in the path of a major German offensive (Operation BLÜCHER-YORCK) in what became known as the Third Battle of the Aisne (27 May – 6 June 1918).

Commentary

Although overall casualties at the First Battle of the Aisne were considerably fewer than in subsequent battles on the Western Front, the losses suffered by the infantry battalions of the BEF assaulting on 14 September 1914 were comparable with those on the first day of the Somme. That day is arguably when trench warfare started on the Western Front. The fighting at the Aisne demonstrated the defensive power of machine guns, trenches and barbed wire. With the benefit of hindsight, Sir John French wrote in 1919 that had either side understood this prospect in August, neither the British would have retreated from Mons, nor the Germans from the Marne.

The BEF returned to the Aisne in 1918 and fought in the Third Battle of the Aisne (see Chapter 22). Bois des Buttes: Memorial to the Devonshires in La-Ville-aux-Bois-lès-Pontavert. © Mike St. Maur Sheil/FieldsofBattle1418.org



The BEF may have missed an opportunity to exploit tactical success by its tardy approach. Had other commanders been as enterprising as Hunter Weston, the whole Chemin des Dames feature might have been taken by storm. Had the BEF been better handled as a whole, it might have been able to concentrate and defeat the German VII Corps as it arrived piecemeal into position. Furthermore, the combat at the Aisne higlighted some of the shortcomings of the equipment of the BEF – not least in the lack of howitzers and heavy guns, and in the shortage of entrenching tools. Finally, it must be rememberd that the Battle of the Aisne was an Allied operation with the BEF fighting alongside French troops, whose experience was similar.

The Battlefield Today

The terrain features are still recognisable today. There is a heritage trail along the Chemin des Dames. The bridges over the Aisne can be identified and the cemeteries and a number of memorials mark the BEF's role in the battle. The main places to visit are:

Cerny-en-Laonnois. This location was a focus for operations by I Corps on 14 September. 1st Battalion, the Loyal North Lancashire Regiment chose the site of the Sugar Factory to commemorate the 73 officers and 1543 men who died in the First World War.

Vendresse CWGC. This cemetery lies in the valley from which I Corps attacks were launched.

La Ferté-sous-Jouarre Memorial to the Missing. The British memorial to the missing of the battles of Mons, Le Cateau, Marne and Aisne stands 30 kilometres south of the Aisne near the banks of the River Marne, alongside the site of the pontoon bridge built by the Royal Engineers, which is also commemorated.

Soupir Chateau. At Soupir, there are remains of a chateau used as a dressing station in the battle. Soupir Churchyard contains several British graves.

Loyal North Lancashire memorial at Cerny-en-Laonnois. © Barbara Taylor

To see the crossing sites bridged by the BEF, visit the bridge at Chavonne or Pont Arcy close to Vendresse, or the site of the bridge at Venizel crossed by Hunter Weston.

Frank Baldwin

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5. The First Battle of Ypres
(19 October – 22 November 1914)

Description	Allied	German
Commanders-in-Chief	BEF: Field-Marshal Sir John French French Army Detachment in Belgium: General Victor d'Urbal	Fourth Army: Colonel-General Duke Albrecht von Württemberg Sixth Army: Colonel-General Crown Prince Rupprecht of Bavaria
Principal Forces Engaged	**British Expeditionary Force** I Corps: 1st & 2nd Divisions II Corps: 3rd & 5th Divisions III Corps: 4th & 6th Divisions IV Corps: 7th Infantry & 3rd Cavalry Divisions Cavalry Corps: 1st & 2nd Cavalry Divisions Indian Corps: Lahore & Meerut Divisions **French Army Detachment in Belgium** IX Corps: 17th & 18th Infantry Divisions; 6th & 7th Cavalry Divisions XVI Corps: 31st, 32nd, 39th & 43rd Divisions XXXII Corps: 38th, 42nd & 89th Infantry Divisions; 4th Cavalry Division; Marine Fusilier Brigade XX Corps: 11th & 26th Divisions I Cavalry Corps: 1st, 3rd & 10th Cavalry Divisions II Cavalry Corps: 5th & 9th Cavalry Divisions; 87th (Territorial) Infantry Division	**Fourth Army** III Reserve Corps: 5th & 6th Reserve Divisions; 4th Ersatz Division XXII Reserve Corps: 43rd & 44th Reserve Divisions XXIII Reserve Corps: 45th & 46th Reserve Divisions XXVI Reserve Corps: 51st & 52nd Reserve Divisions XXVII Reserve Corps: 53rd & 54th Reserve Divisions **Sixth Army** II Corps: 3rd & 4th Divisions VII Corps: 13th & 14th Divisions XIII Corps: 26th Division; 25th Reserve Division XIV Reserve Corps: 26th Reserve Division & 6th Bavarian Reserve Division XIX (Saxon) Corps: 24th and 40th Divisions **Group Fabeck** XV Corps: 30th & 39th Divisions II Bavarian Corps: 3rd & 4th Bavarian Divisions; 26th Division (from XIII Corps) **Group Gerok** 3rd Division; 6th Bavarian Reserve Division; 11th Landwehr Brigade; 25th Reserve Division **Group Linsingen** XV Corps (from Group Fabeck) Plettenberg's Corps: 4th Division; Composite Guards Division **Cavalry** I, II, IV & V Cavalry Corps: eight divisions

Description	Allied	German
Context	An advance to contact battle turns into a desperate defensive effort to block the German drive on the Channel Ports.	A major offensive to restore the war of movement, to turn the Allied left flank and to capture the Channel Ports.
Casualties	58,155 British; 85,000 French; 22,000 Belgian	Ypres: 46,765; Yser: 76,250
Consequences	Together with its French and Belgian allies, the old regular army of the BEF defeated a major enemy offensive. Although weakened by heavy losses, it held the Ypres salient.	This was the last major German offensive of 1914 in the West. The failure to break the Ypres-Yser line saw the Western Front solidify from Switzerland to the North Sea.

Introduction

With the failure of the Schlieffen-Moltke Plan, which culminated at the Marne, the German army transitioned to defence. It dug in along the heights of the Aisne, a trench system that would become soon 'the Western Front 1914-1918'. In a last effort to return to a war of movement the Germans extended their attacks northwestwards, trying to turn the open Allied left flank. In turn, the Allies attempted to resume the offensive and turn the German right. Erroneously called the 'Race to the Sea', these manoeuvres led to a complex series of major encounter battles that culminated in the fight for Ypres (now known as Ieper in Flemish) and the line of the Yser Canal (seen by the Germans as one great battle).

Deployment

The German Fourth Army pursued the Belgian army as it retreated from Antwerp and attacked it along the line of the Yser Canal, its last line of defence in Belgium. The German Sixth Army extended its operations in northern France towards the rail and road hub of Ypres in south-east Belgium. The BEF deployed north and west from the fighting around Armentières as its corps were relieved by the French, who also sent large reinforcements to aid the British and Belgians at Ypres and the Yser line respectively.

Opening of the Battle, October 1914

Between 18 and 29 October 1914, the German Fourth Army made persistent, unsuccessful attacks on the line of the Yser Canal which was firmly held by the Belgian army, with significant French assistance. Particularly noteworthy was the Marine Fusilier brigade's epic defence of Dixmuide (in modern Flemish, Diksmuide). Very bad weather hampered German operations and, from 29 October, the Belgians began opening the sluice gates at Nieuport (Nieuwpoort) to let the North Sea flood into Belgium. The inundations put a stop to further German attacks in this area.

By 21 October the British I Corps had arrived in Ypres, intending to develop an attack eastwards towards Menin (Menen). Instead it ran into a major German offensive using four new reserve corps that had been raised soon after the start of the war. Many of these troops were 'war volunteers', highly patriotic students who left their university studies to attest ahead of their conscription call-up dates and were sent to the front with a minimum of infantry training. Woefully inexperienced and seriously under officered, they attacked along the line Bixschoote-Langemarck, using tactical formations (close company columns) last seen in the Franco-Prussian War of 1870. The legendary rifle skills of the BEF saw these young Germans mown down in their thousands. Some of these reserve units had 50% casualty rates. In German folk memory, the disastrous action became known as the *Kindermord bei Ypren* – 'the Massacre of the Innocents at Ypres'.

Once the northern attack broke down, Crown Prince Rupprecht's Sixth Army became the main attack formation and, with its large mounted component, developed an offensive north towards Zandvoorde, along what would become the southern flank of the Ypres salient. The newly formed Group Fabeck came under its command and, greatly outnumbering the defenders, it stretched the BEF to breaking point in attacks mounted on both sides of the Menin Road. The British I and IV Corps conducted a most stubborn, but very expensive, defence. Polygon Wood changed hands several times, but the relentless German pressure saw the British line slowly falling back towards Ypres.

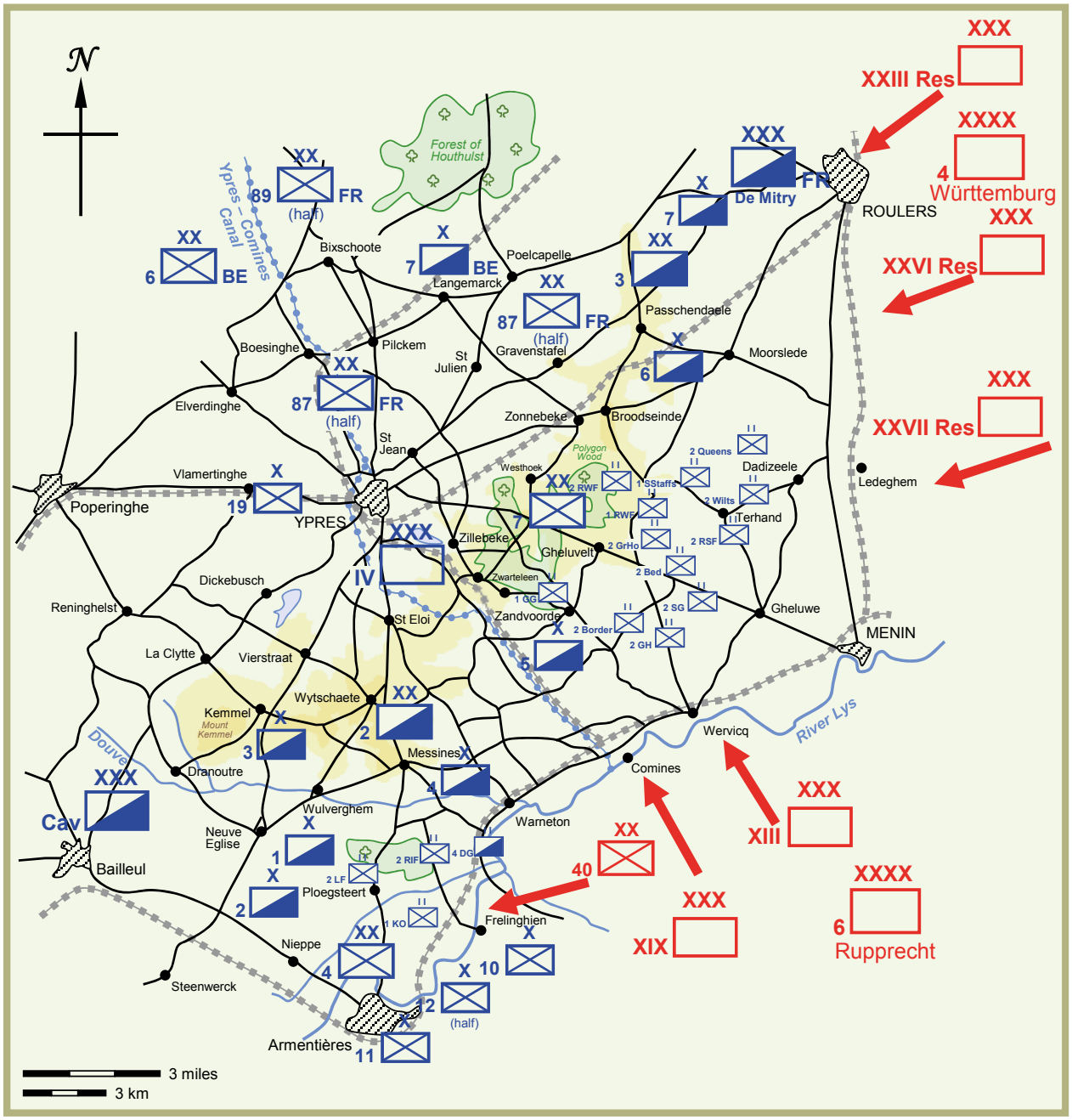
As the historian Richard Holmes observed, 'The Germans appeared to be in overwhelming strength and well supported in artillery, while British reserves of men and ammunition were being quickly consumed.' Between Messines and the Menin Road, the Germans had achieved

a superiority of 'six to one in rifles and field artillery, and substantially more in heavy guns'.[1] For the Allies, the situation looked increasingly threatening.

The Crisis: 30/31 October 1914

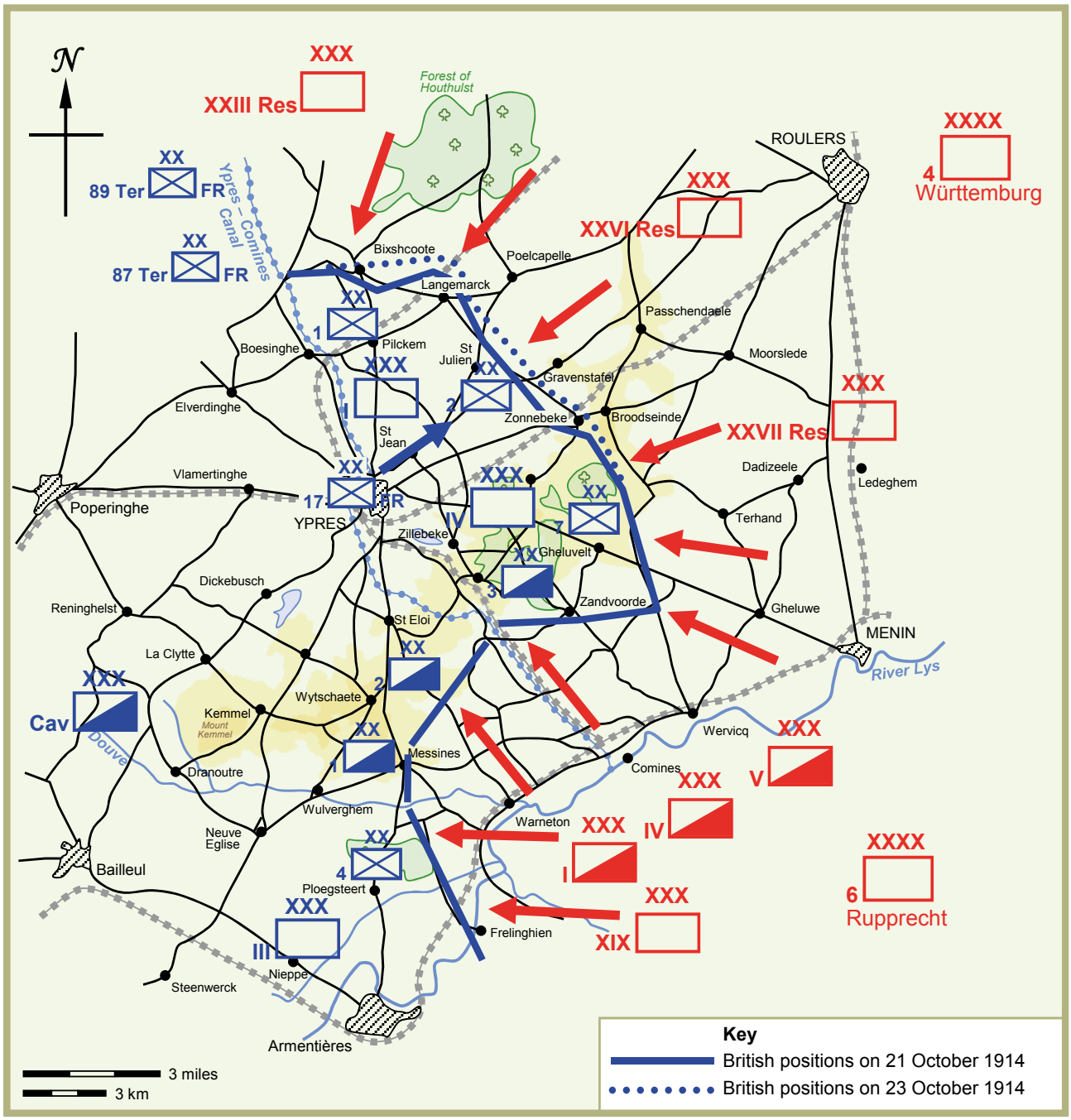
On 30 October the German Fourth Army renewed its attacks along the line Bixschoote-Langemarck, now held by formations of the French Army in Belgium. The Germans were comprehensively defeated and their 'useless' attacks were halted by Army order. However, they had achieved the objective of tying down the French as much as possible while the BEF reached a critical stage in its battle.

Group Fabeck was augmented by cavalry, jaegers, landwehr and artillery units. It launched a massive offensive from the Menin Road and south through Zandvoorde and Messines, all the way to Ploegsteert ('Plugstreet') Wood. 31 October saw the Household Cavalry's line on Zandvoorde Ridge overwhelmed and lost. The Messines Ridge, thinly held by elements of 1st Cavalry and Meerut Divisions, came under great pressure. Leading elements of 5th Division, just arrived from the Neuve Chapelle area, joined the defence in time to deny Messines village from a determined attack by 26th (Württemberg) Division. In a celebrated action that evening, the London Scottish (14th Battalion, The London Regiment) became the first



Map 5.1 – The First Battle of Ypres: Situation on 19 October 1914

[1] Richard Holmes, *Army Battlefield Guide: Belgium and Northern France* (London: HMSO, 1995), p. 103.



Map 5.2 – The First Battle of Ypres: Situation on 21-23 October 1914

battalion of the Territorial Force to see action as it was employed in the knick of time to defeat the last big attack of the day at Messines.

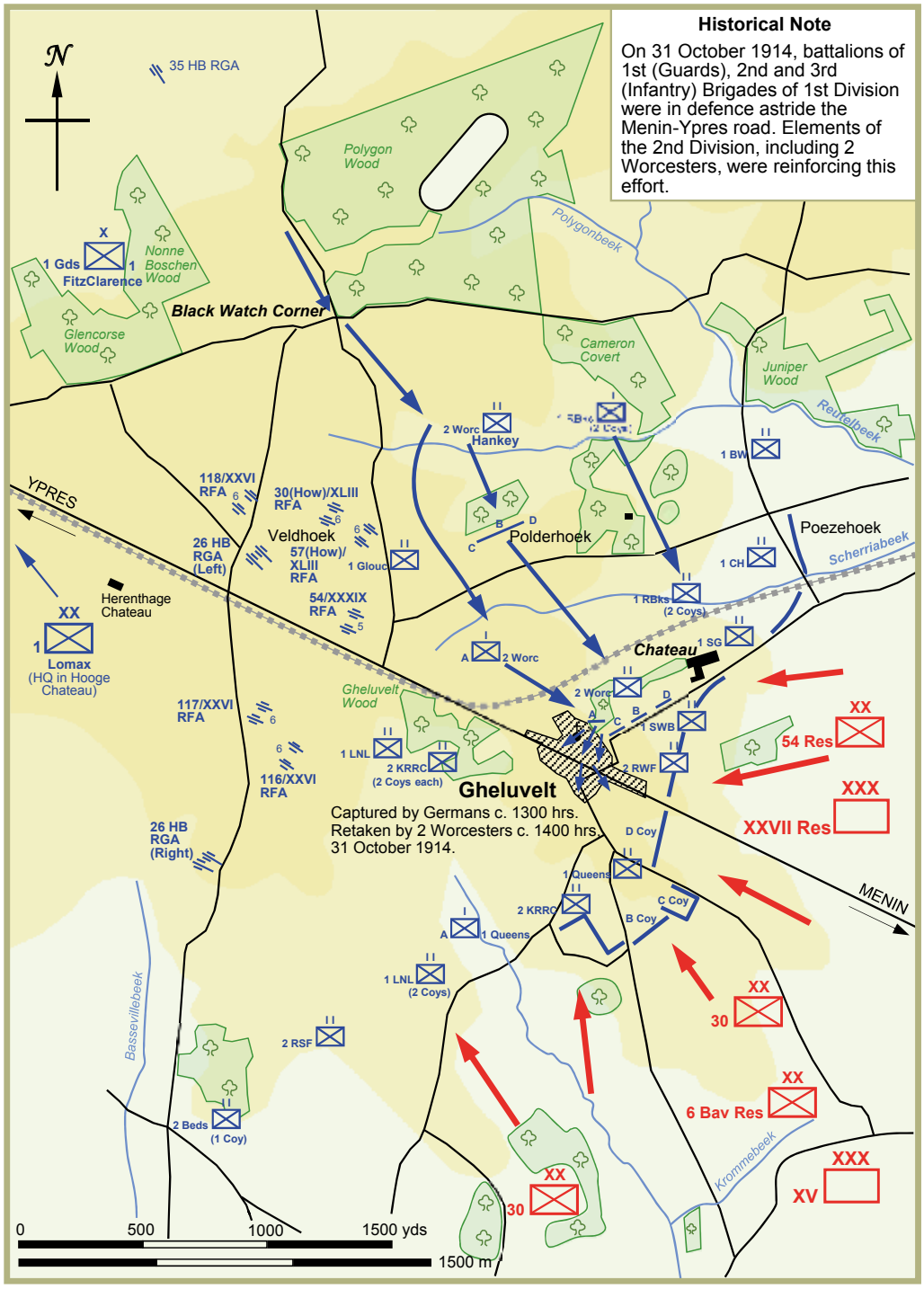
A more serious assault developed along the Menin Road itself. The Kaiser, on a new white charger, had arrived at Menen to witness the final triumph of his troops. The attack, centred on the village of Gheluvelt astride the main road to Ypres, struck a very depleted and exhausted force of British infantry. Their defence elicited the famous description by the Germans that 'over every bush, hedge and fragment of wall floated a thin film of smoke, betraying a machine-gun rattling out bullets'. The destructive defensive fire was coming from the Lee-Enfield rifle in the hands of the best-trained infantry in the world.

A Saxon reserve unit finally broke into Gheluvelt and it looked as if the British line must break. Before the attackers could consolidate their position and regain good order, however, a perfectly timed counter-attack by 2nd Worcesters, launched from the vicinity of Nonne Boschen Wood, ejected a surprised enemy and restored the situation.

Closing Stages: November 1914

1 November saw the relentless German pressure finally take control of Messines Ridge. At 0200 hours Bavarian infantry used the novel method of a totally silent, surprise attack to break into Wytschaete ('Whitesheet'). Unfortunately for them their artillery was not made aware of the success and shelled them very heavily. But the attack developed throughout the day and the whole line of the ridge was stormed, with Hill 75 (Spanbroekmoelen) being the furthest point of German advance.

With fresh formations brought in from Lille and Arras, including a new composite Guards Division, the Germans prepared another strong offensive mounted along the axis of the Menin Road. Prior to this assault, attacks were continued along the southern and northern edges of the Ypres Salient to fix the Allied defenders. From 5 November a new series of attacks along the line Bixschcoote-Langemarck were soon declared by the Germans to be 'a useless waste of life'. While XXII Reserve Corps did manage finally to storm Dixmuide, the Belgians demolished all



Map 5.3 – The First Battle of Ypres: The Recapture of Gheluvelt, 31 October 1914

The Cloth Hall, Ypres. © IWM Q9938
Inset: The Cloth Hall Today © Barbara Taylor

the canal bridges and the line settled down there for the next three years.

The newly-created Group Linsingen now joined Group Fabeck for what would prove to be the final attack against the line held by the British II Corps. On 11 November in a thick fog the attack along the Menin Road was carried out by the Prussian Guards, with supporting attacks going in on either side of them. In another critical moment for the defence of the Ypres Salient, a German Guards regiment broke through Nonne Boschen Wood into the open ground beyond. It was faced by a brigade of the Royal Field Artillery and a thin line of rifle-armed Royal Engineers, cooks, transport men and infantry stragglers. Between them and the Channel coast, there were no more British or French troops in depth. But the Germans did not know about this weakness, and sensed much stronger Allied forces were available. The attackers, however, were shot to a standstill and then hit by a timely counter-attack by 2nd Oxfordshire and Buckinghamshire Light Infantry. The line was secured and all further attacks defeated. Largely through hesitation based on a misappreciation of the situation, the Germans had failed to reinforce and exploit vigorously their success. As a result, there was no German break-through and Ypres was held.

Commentary

As the weather deteriorated and losses mounted steeply, the Germans called off their offensive on 17 November 1914, so ending the First Battle of Ypres. Despite several German attempts to capture it (during the Second and Fourth Battles of 1915 and 1918 respectively), the city would remain in Allied hands throughout the war. The defence of the eponymous salient by British Empire and

The Menin Gate Ypres © Johan Bakker

French forces became a defining struggle during that conflict, as did the major British offensive mounted in 1917, which became known as the Third Battle of Ypres, regarded by many as a futile battle.

The BEF used up all its available forces and reserves in the first, truly desperate battle for Ypres. It consumed the divisions of the British I, III, IV, Cavalry and Indian Corps. It would not have been able to hold on in the engagements of October and November 1914 without the great assistance provided by the French, and by the actions of the Belgian army further north. Hence it was an Allied defensive victory, but one won at a terrible cost. By the later stages of this punishing series of defensive actions, the original BEF was in a parlous state. There were heavy losses amongst general and field officers alike; junior officers stepped up to take their place; other ranks displayed the stubbornness that history has taught us to expect of them, refusing to acknowledge that they might be facing defeat. The Germans, equally valiant, expended the last of their new reserve formations but had come much closer to success than they realised at the time. Had their intelligence of Allied – particularly British – defences been better, and had they concentrated their forces more effectively at potentially decisive break-through sectors such as Gheluvelt or Nonne Boschen Wood, on 31 October and 11 November 1914 respectively, then it is questionable whether Ypres could have been saved.

The British Official History described the First Battle of Ypres as 'the last phase of open warfare before the belligerents settled down to undiluted trench warfare'. The cost to the BEF was high. No fewer than 2,298 officers and 51,807 men became casualties between 14 October

and 30 November 1914. By the end of the year, the losses in the seven regular infantry divisions nearly equalled their total establishment strength. The German losses were roughly comparable.

Apart from its importance as a rail and road hub, Ypres was a town of little value in itself. But it quickly assumed operational and strategic significance as the firm, southern anchor of the Yser line, as the last corner of Belgium to remain unconquered, and as a springboard for future offensives such as Third Ypres. Thus its retention became a political-military imperative for the Allies until the end of the war. Yet it is also fair to say that its importance was probably exaggerated at the time and in retrospect.

The Battlefield Today

Ypres is a major centre for visiting the Flanders battlefields. There are many memorials to British and Dominion divisions and battalions involved in the 1914 battles. The Menin Gate memorial to the missing, with its daily service of remembrance – the playing of The Last Post at 2000 hours – and the CWGC cemetery at Tyne Cot, are the most well-known.

John Lee

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The Ypres Salient: Hooge Chateau and Crater. On 31 October 1914 Hooge Chateau, used as a headquarters, was hit by shellfire. The commander of the 1st Division, Lieutenant General Sir Samuel Lomax died later of his wounds; Major General Sir Charles Monro, commanding the Second Division, was also wounded. Several members of both divisional staffs were killed and wounded. The crater resulted from a British mine blown on 19 July 1915.

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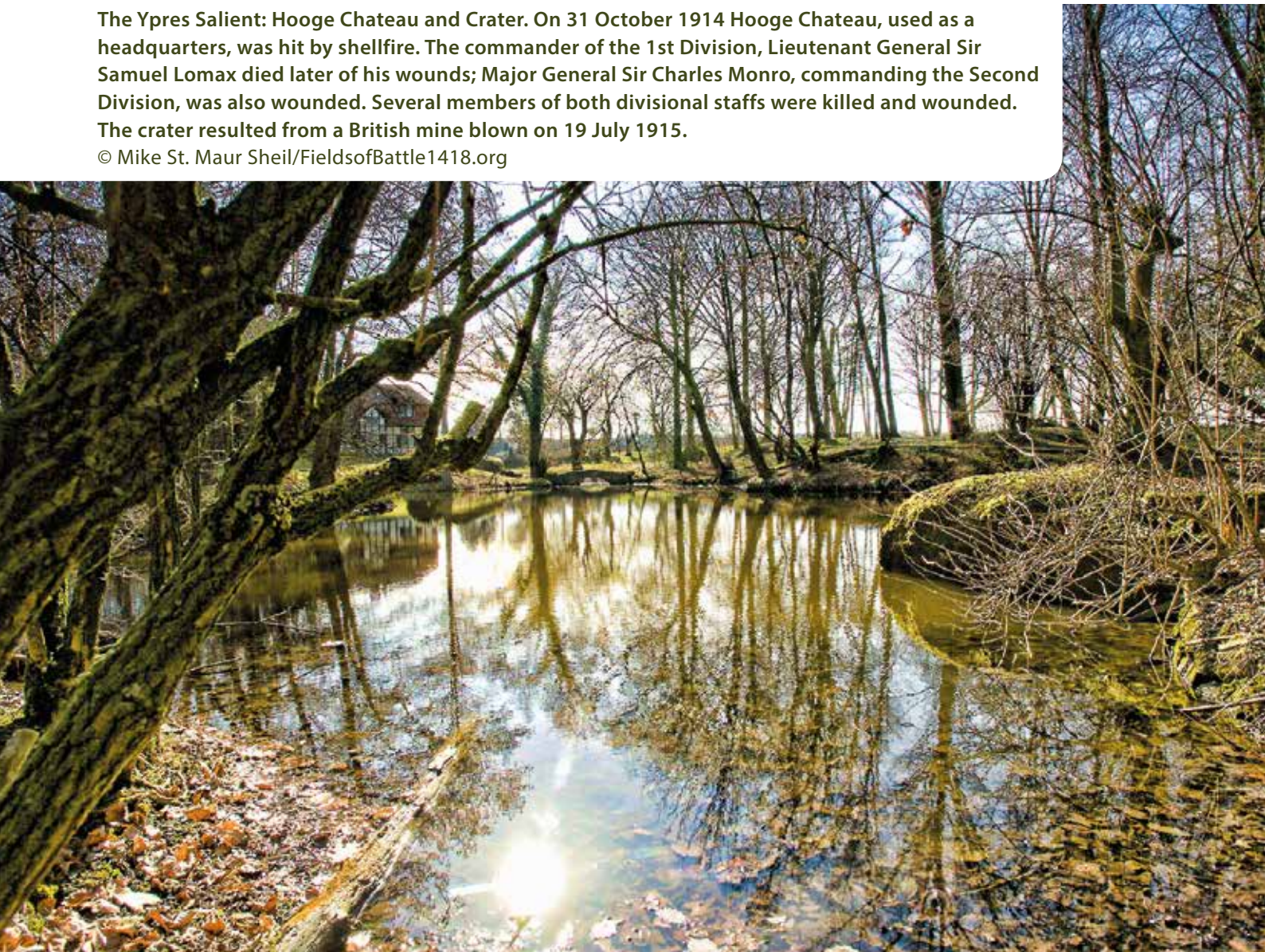


6. The Battle of Neuve Chapelle
(10 – 12 March 1915)

Description	British Empire	German
Commanders-in-Chief	General Sir Douglas Haig (First Army)	Crown Prince Rupprecht of Bavaria (Sixth Army)
Principal Forces Engaged	**British First Army** IV Corps: 7th & 8th Infantry Divisions Indian Corps: Meerut & Lahore Infantry Divisions	**German Sixth Army** VII Corps: Elements of 13th & 14th Infantry Divisions 6th Bavarian Reserve Division
Context	Despairing of victory on the Western Front the British government diverted resources to the Gallipoli Campaign. Field-Marshal Sir John French hoped that a successful if limited action by the British Expeditionary Force would re-focus his government's attention on the Western Front and earn the respect of his French allies.	Attention was concentrated on the Eastern Front and the British army was not highly rated as an offensive force. The defensive sector facing the BEF was lightly held and poorly fortified.
Casualties	12,892 (killed, wounded & missing)	12,000 (estimated total)
Consequences	Neuve Chapelle village was captured but operational objectives were not reached. Attack plan was adopted as model for future offensives.	More attention was paid to defence of British sector and defensive doctrine in general began to change.

Introduction

Having failed to win a quick and decisive victory in France in 1914, the German High Command turned its attention to the Russian front, transferring most of the German strategic reserves to the east, while still hoping to be able to re-deploy and defeat the French before Britain could raise an effective mass army. The French strategic priority remained to drive the German army from French soil. Their commander-in-chief, General Joseph Joffre, planned converging attacks from Artois and Champagne against the Noyon salient, the broad bulge in the centre of the German line. He did not expect much support from the British Expeditionary Force (BEF) but desired that it would take responsibility for a longer front, releasing French divisions for the offensive. Field-Marshal Sir John French, the British commander-in-chief, was keen to cooperate as fully as possible with his ally but the British government had begun to doubt whether it was possible to breach the deadlocked trench lines in France and was looking for an alternative strategic approach. The result was the Dardanelles expedition and the diversion of troops, guns and, crucially, ammunition from the Western Front.

Plans and Preparations

Sir John French was determined to demonstrate that the BEF was not a purely defensive force and selected the Neuve Chapelle area, held by General Douglas Haig's First Army, as a suitable sector for an attack in the early spring of 1915. The village had been captured by the Germans in December 1914 and formed a salient in their line, which ran east and south on either side. A limited attack from both flanks had a good prospect of over-running the village but Haig hoped to be able to 'carry the operation right through; in a sense surprise the Germans, carry them right off their legs, push forward to the Aubers ridge with as little delay as possible and exploit the success thus gained by pushing forward mounted troops forthwith'.

IV Corps and the Indian Corps were responsible for the attack but their commanders were more inclined to adopt a more methodical step-by-step approach than that desired by Haig. In particular, Lieutenant General Sir Henry Rawlinson, commander of IV Corps, was to become the leading proponent of these 'bite and hold' tactics. This divergence in setting objectives was to become characteristic of British operational planning for most of the war. Planning for the initial phase of the attack was forward-looking and introduced elements which were to become the keys to success later in the war. Air photography made it possible to prepare detailed maps of the German defences. Haig pushed the use of air reconnaissance against resistance from some artillery staffs, telling them to drop their 'early Victorian methods'. The high water table in the area meant that the German defences were based on breastworks of sandbags built above ground level. Replicas were constructed and bombarded by the British gunners to determine the number of rounds per yard of front, which would be required to destroy these defences, a very early example of the use of operational research in warfare. It was decided to begin with a short but intensive bombardment to surprise the Germans. The required number of guns was concentrated on the front and registered on their targets covertly to ensure surprise.

German pre-war defensive doctrine favoured a strong forward defence. The front line was to be held at all costs and reserves committed to check and pinch out any penetrations. The construction of depth positions was forbidden, for fear that the infantry would be less inclined to resist in the front line. However, a chain of strongpoints had been constructed a few hundred metres to the rear. These were to be occupied by the machine gun units of the reserves to support their counter-attacks. These positions had not been detected by the British and were not therefore targeted in the preliminary bombardment. The coverage of air reconnaissance was limited.

The British concept of operations was to concentrate an overwhelming force on a 2,000-yard (1829 metres) frontage in front of the village of Neuve Chapelle, and destroy the barbed wire obstacles and breastworks of the front line by an intense 35-minute bombardment by 450 field and 80 medium and heavy guns. Then three brigades (15 battalions) would assault a German force of no more than six companies, with two more in immediate reserve. Having secured the German trench line the assaulting troops were required to wait while the village itself was bombarded for 30 minutes before advancing again, capturing the village and securing the old British front line from 1914 (the Smith-Dorrien Line) as their first objective. In the second phase fresh troops from all four divisions in the attacking corps were to advance at a time to be agreed by the corps commanders securing a line from the Bois du Biez to Pietre and, supported by the flanking formations, then push on to the Aubers Ridge, six miles (ten kilometres) into the German depth. Haig recognised that this was an ambitious scheme, given that only three days' reserve of ammunition was available and that the French were not cooperating in the attack. He therefore fixed each intermediate objective as a line to be secured for defence. Thus, by insisting on pauses, he endorsed his subordinates' methodical approach and gave up on his idea of a swift penetration.

The Battle

The concealed deployment of assault troops and artillery was successfully completed and the preparatory bombardment opened at 0730 hours on 10 March 1915. The German barbed wire, which lacked the depth and density achieved later in the war, was quickly cut. The breastworks were practically obliterated and the defenders quickly overwhelmed except on the flanks. On the right, the 1/39th Garwhal Rifles lost direction and suffered heavy losses. The remainder of the attacking Garwhal Brigade reached the Smith-Dorrien Line on schedule but as the old trenches were flooded, a new line was prepared fifty yards in rear. However, there was no attempt to probe further forwards towards the Bois du Biez in the German rear.

In the centre, 25th Brigade of 8th Division also found the defences shattered and passed through Neuve Chapelle with little difficulty. The troops reached their objective but further advance was checked when it became apparent that 23rd Brigade on the left had not kept pace. Destruction of the German defences on the extreme left flank had been allocated to two newly raised 6-inch howitzer batteries, which had only arrived on the previous afternoon. They did not have time to prepare their gun positions or register their targets and the German trench survived the inadequate bombardment. The defenders annihilated the leading waves of the 2nd Middlesex and checked the left company of the 2nd Scottish Rifles (Cameronians). Demonstrating flexibility, other Royal Artillery batteries were directed on to the intact German trench line; the defenders surrendered and the objective was secured.

British Order of Battle

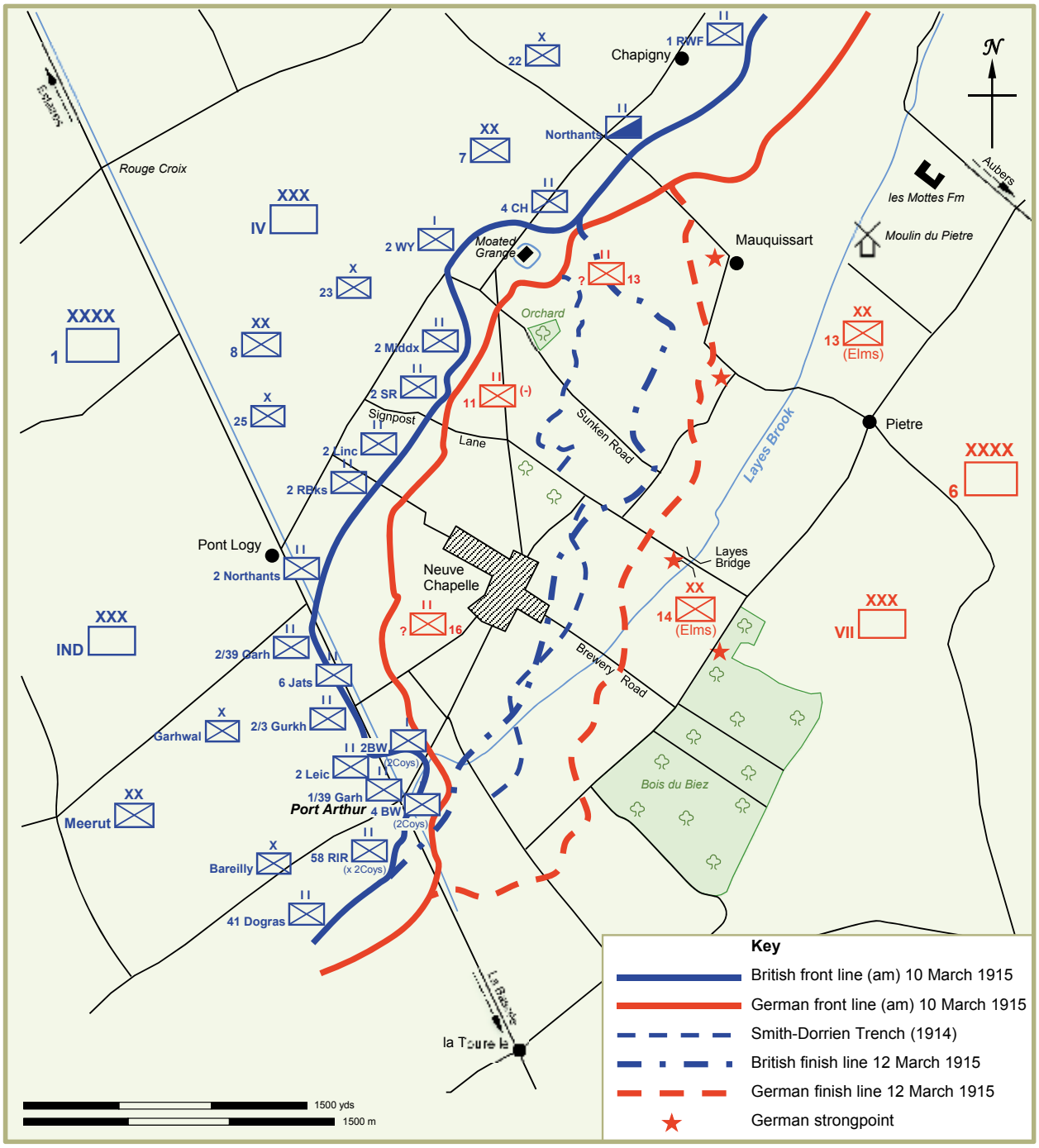
(Brigades that attacked on 10 March 1915)

8th Division
- 23rd Brigade
  - 2/Devonshire
  - 2/West Yorkshire
  - 2/Cameronians (Scottish Rifles)
  - 2/Middlesex
- 25th Brigade
  - 2/Lincolnshire
  - 2/Royal Berkshire
  - 1/Royal Irish Rifles
  - 2/Rifle Brigade
  - 13/London (TF)

Meerut Division
- Garhwal Brigade
  - 2/Leicestershire
  - 1/39 Garhwal Rifles
  - 2/39 Garhwal Rifles
  - 2/3 Gurkhas
  - 3/London (TF)

German Order of Battle

- VII Corps
  - 11th Jaeger Battalion
- 13th Division
  - 25th Brigade
    - 13th Regiment (-)
- 14th Division
  - 27th Brigade
    - 16th Regiment (-)
- Reserves include:
  - 6th Bavarian Reserve Division



Map 6.1 – The Battle of Neuve Chapelle, 10-12 March 1915

The ruins of Neuve Chapelle, immediately after its capture by the 8th Division on 10 March 1915. © IWM

By 1300 hours, therefore, the first phase objective had been captured across almost the whole front. However, reports reaching divisional and corps headquarters gave a misleading impression of the problems on the flanks. Once these were corrected the second phase of the attack was ordered but it was not until between 1700 and 1800 hours that it began. In the gathering darkness and in the face of German fire from the strongpoints on the line of the Bois du Biez and the Layes Brook progress was soon checked. The Indian and IV Corps had advanced up to 1200 yards (1097 metres) on a 4000-yard (3658 metres) front but there were undoubtedly missed opportunities to continue the attack while the Germans were trying to form a coherent second line. This unfortunate break in the momentum of the British attack suggests a lack of situational awareness and 'grip' at divisional, corps and at army level.

This pause was the key point in the battle. During the night the Germans completed a shallow but continuous breastwork and trench across the new front and improved their strongpoint defences. Reserves were beginning to arrive though they were too late for a planned dawn counter-attack, which was abandoned. Notwithstanding this setback, the British tried to renew their attack in the early morning and again in the afternoon of 11 March. But the artillery could not locate the new defences accurately enough to repeat the previous day's destruction. Line communications were continually disrupted by German artillery fire. When the infantry tried to advance they were immediately met by intense rifle and machine gun fire. Units had great difficulty in communicating with neighbouring or higher headquarters and no significant progress was made.

At the end of the day Haig visited the battlefront and ordered a resumption of the offensive at 1030 hours on 12 March, following a redeployment of the artillery. However, this plan was pre-empted by a German counter-attack by ten battalions, with another ten in support and reserve, a total of 16,000 men. It began with a bombardment at 0430 hours, followed by an infantry advance as day began to break. German artillery fire was inaccurate and the infantry were not immune to the communication and coordination problems that had plagued the British on previous days. Although the attackers were able to approach close to the British trenches in the dawn mist, they were met by a weight of fire that halted most of them. Those who penetrated the British line were driven out by local counter-attacks. The mist also interfered with British artillery observation and delayed the planned resumption of the offensive until after midday. The British attack began patchily. Some limited successes raised hopes that the German defences were crumbling but heavy casualties elsewhere demonstrated that they were generally intact. Brigades reported that their troops were exhausted after three days in action. During the evening of 12 March 1915 Haig ordered that the current front should be held as a defensive position.

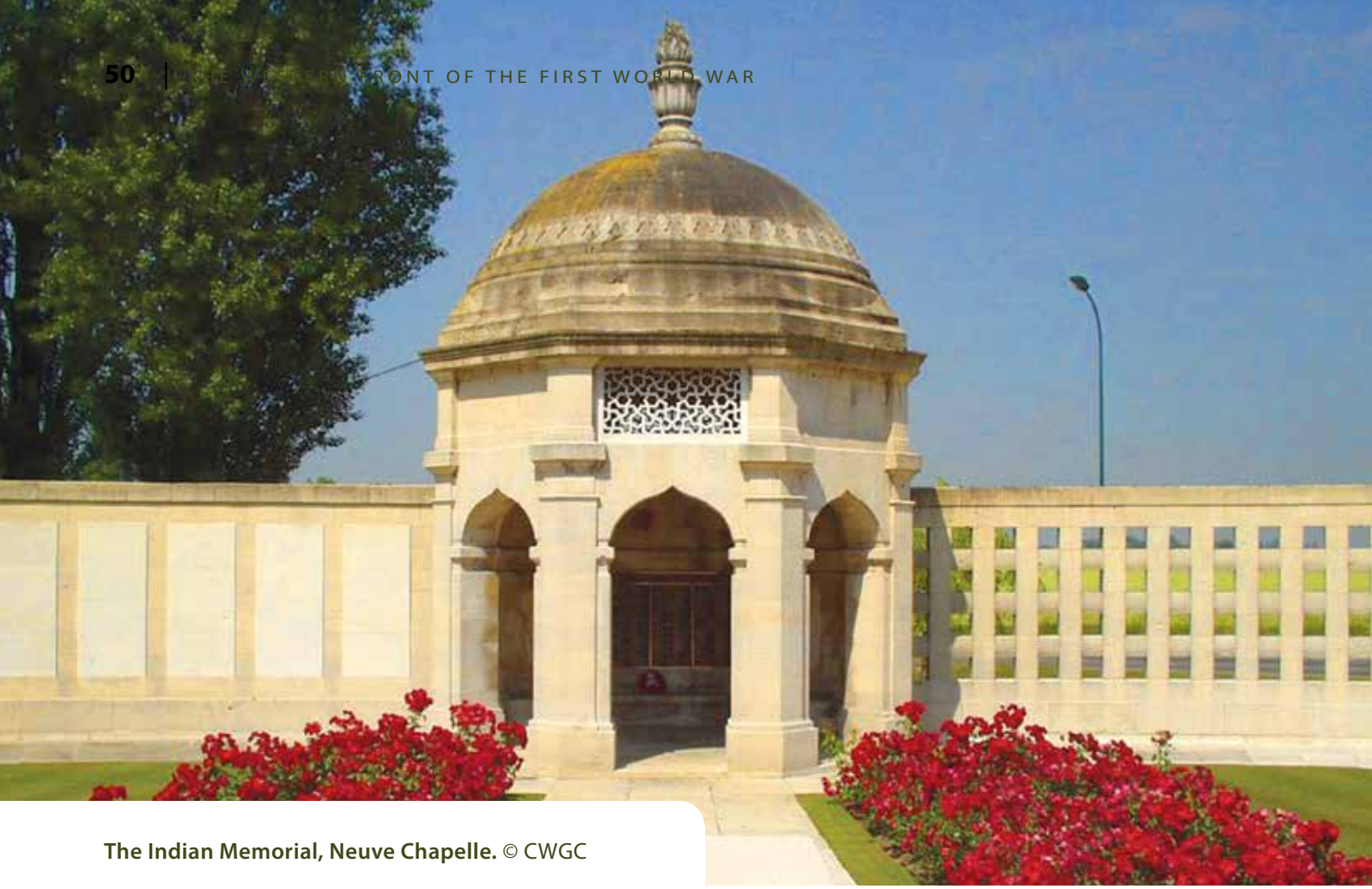
Commentary

Although the Battle of Neuve Chapelle did not bring the operational success which Haig had hoped for, it was far from a disaster. Although British and German casualties were roughly equal at about 12,000 in total on either side, the British felt the loss of trained soldiers more keenly. The Germans were forced to revise their comparative neglect of the British sector and the French re-assessed the potential of their Allies in the BEF. In planning and preparation Neuve Chapelle established the pattern for British offensives for the rest of the war. Techniques that were first tried in March 1915 soon became standard fare and many useful lessons were learnt. However, the British failed to appreciate that their enemy had his own 'learning curve'.

The Germans improved their field fortifications and ensured that their machine guns were better concealed and protected. They began to shift away from the dogma of a strong forward defence and explore the possibilities of an elastic defence in depth. In their next offensive, the Battle of Aubers Ridge on 9 May 1915, the British again relied on a short bombardment that was unable to cope with the improved German defences.[1] Neuve Chapelle had

Neuve Chapelle Battlefields: Looking east along the approximate line held by the 1st Worcesters on 11 March 1915 after the initial attack against the Moated Grange.
© Mike St. Maur Sheil/FieldsofBattle1418.org

[1] See Chapter 8.



The Indian Memorial, Neuve Chapelle. © CWGC

begun the contest between offense and defence, which would continue for the rest of the war, as new techniques were matched by counter-measures prolonging the stalemate in the trenches until 1918.

The Battlefield Today

The flat countryside, which hindered artillery observation in 1915, still makes it difficult to find a good overview of the battlefield and a rash of modern development around the villages disguises the original layout of settlement. However, it is still possible to identify key terrain features such as Neuve Chapelle church, Pietre, the Bois du Biez, Laye Brook and Port Arthur crossroads. (The concrete bunkers in the Bois du Biez were constructed after the battle).

The Indian Memorial at Port Arthur should be visited and the Portuguese military cemetery further south gives a good view of the Indian Corps sector and the right wing of IV Corps. From the eastern end of Neuve Chapelle village one can view the 'Moated Grange' and the area where the Middlesex Regiment and the Scottish Rifles suffered so heavily. Neuve Chapelle British and Neuve Chapelle Farm Cemeteries were begun after the battle, but most of those who died are commemorated at le Touret Memorial to the Missing and the Indian Memorial.

Michael Orr

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7. The Second Battle of Ypres
(22 April – 25 May 1915)

Description	Allied	German
Commanders-in-Chief	General Sir Horace Smith-Dorrien – Second Army	General Duke Albrecht von Württemberg – Fourth Army
Principal Forces Engaged	**British Second Army** II Corps: 5th Division V Corps: 4th, 27th, 28th & 50th Divisions; 1st Canadian and Lahore Divisions Cavalry Corps: 1st, 2nd & 3rd Divisions **French Army in Belgium** 45th Algerian & 87th Territorial Divisions 18th, 152nd & 153rd Divisions **Belgian Army** 1st & 6th Divisions	**German Fourth Army** XV Corps: 30th & 39th Divisions XXII Reserve Corps: 43rd & 44th Reserve Divisions XXIII Reserve Corps: 45th & 46th Reserve Divisions XXVI Reserve Corps: 51st & 52nd Reserve Divisions XXVII Reserve Corps: 53rd & 54th Reserve Divisions 38th Landwehr Brigade 2nd and 4th Marine Brigades
Context	BEF, just returned to the defence of the Ypres Salient, faces a major attack with a new threat.	German army attacks the Ypres Salient as a strategic diversion, to test the new gas weapon and, if possible, to seize Ypres.
Casualties	British: 59,275	34,933
Consequences	The Allies hold on at disproportionate cost to a drastically reduced salient, giving tactical advantage to the Germans on higher, dominating ground.	The Germans miss an opportunity to take Ypres, and, having used gas, invite retaliation in kind (the British employed chlorine at Loos in September 1915).

Introduction

In April 1915 Germany was reinforcing the Eastern Front and planning an offensive against the Russians to aid its Austro-Hungarian ally.[1] As a strategic diversion, Falkenhayn authorised an attack by the German Fourth Army in Belgium on the Ypres Salient. Not wishing to commit too many troops, he also approved the experimental use of poison gas, as suggested by the distinguished German chemist, Fritz Haber.[2] The aim of the operation was strictly limited to pushing in the Ypres salient: Ypres itself was not a stated objective.

At that time the British Expeditionary Force, reorganised and rested after its near destruction at the First Battle of Ypres (October-November 1914), was moving back into the Salient, with British Second Army relieving the French formations there. The relief in place was half completed when the Germans attacked. There had been warnings of

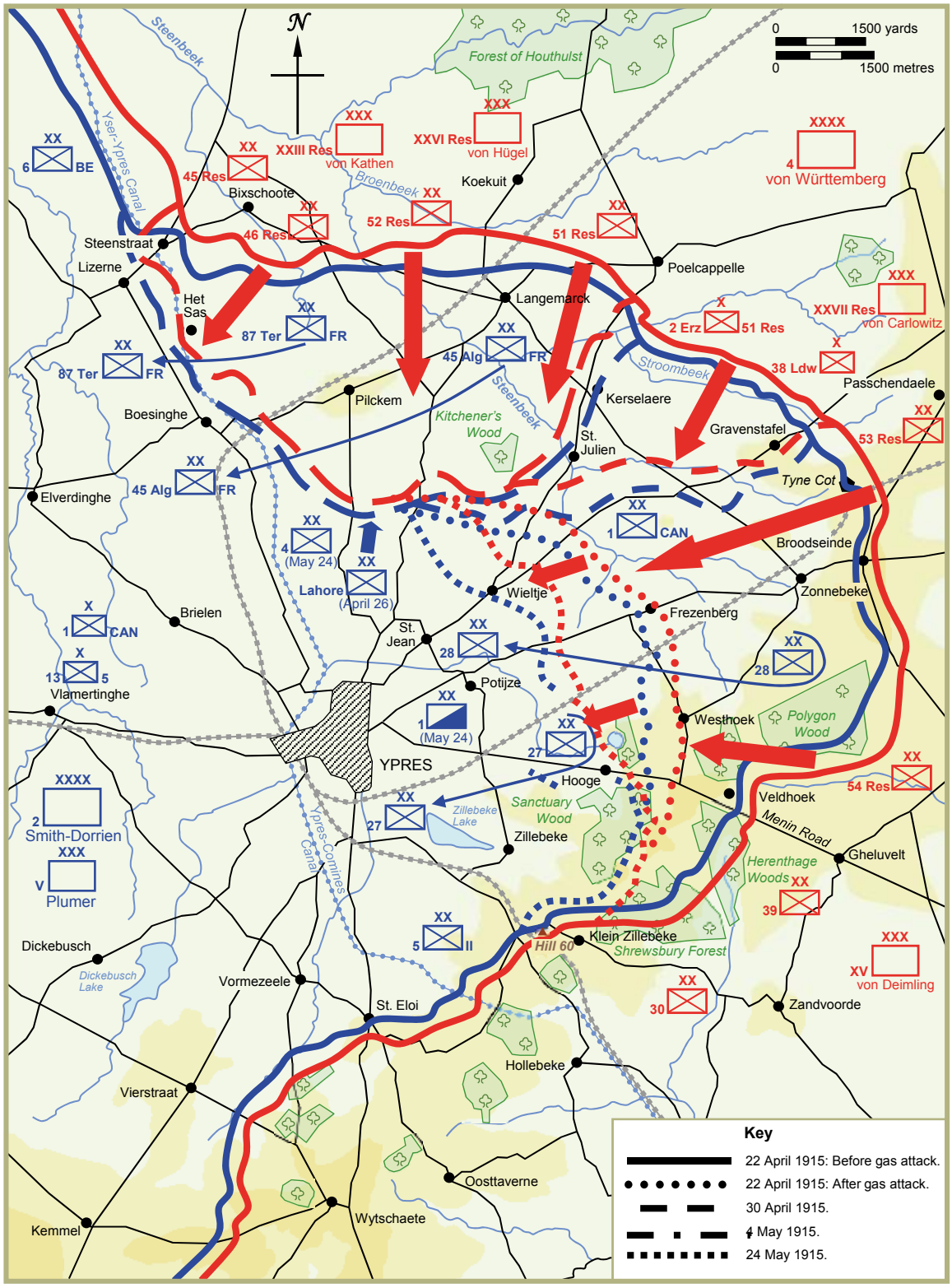
[1] In April 1915, the newly formed German Eleventh Army (ten infantry divisions) under command of General August von Mackensen was transferred from the Western to the Eastern Front. Together with the Austro-Hungarian Fourth Army placed under his command, Mackensen launched the highly successful Gorlice-Tarnów operation (2 May – 22 June 1915) that broke through the Russian front in Galicia, resulting in a Russian retreat.

[2] Haber (1868-1934) is described as the 'father of Chemical Warfare' for this work. He won the Nobel Prize for chemistry in 1918 for his achievement in synthesizing ammonia, which had allowed Germany during the First World to produce fertilizers and explosives. See http://www.nobelprize.org/nobel_prizes/chemistry/laureates/1918/haber-bio.html. The official Nobel biography of Haber diminishes his vital contribution to the German war effort.

the possible use of poison gas from press reports, secret agents and deserters. Without knowing how, when or where such an 'unethical' event might occur there was little the Allies could do in advance. After all, the use of poison gas as a weapon of war was specifically prohibited under the Hague Conventions of 1907.[3]

Opening Attacks and First Response

The German attack was entirely dependent on favourable wind conditions for releasing the chlorine gas clouds. Some gas cylinders were discovered when the 5th British Division attacked Hill 60 on 17 April 1915. This important height is a man-made feature, the spoil bank from the



Map 7.1 – The Second Battle of Ypres, 22 April – 25 May 1915

[3] Article 23 stated: 'In addition to the prohibitions provided by special Conventions, it is especially forbidden [to] employ poison or poisoned weapons'. See the full text at: http://www.icrc.org/applic/ihl/ihl.nsf/ART/195-200033?OpenDocument.

adjacent railway cutting heaped up before the war. In such uniformly flat terrain it provided the most significant observation point for miles around. Its ownership was always hotly contested during the First World War. It leant itself to mining and counter-mining, and the Tunnelling Companies, Royal Engineers, were kept busy there.

The first major gas attack – using 168 tonnes of chlorine on a six kilometre front, released from over 5,000 cylinders in just five minutes – struck the French 45th Algerian and 87th Territorial Divisions around Langemarck soon after 1700 hours on 22 April. The defenders were wholly unprepared for such an event and lost 6,000 men in the first two hours.[4] The German infantry of XXIII and XXVI Reserve Corps, uncertain of how to proceed in these unique circumstances, easily secured their initial objective of Pilckem Ridge and could have penetrated further if ordered to do so. The advance was firmly halted on the line of the Yser Canal by formations of the Belgian army, on whom the French rallied.

The 27th and 28th British, and 1st Canadian Divisions moved to support the French and the first counter-attack (an expensive partial success) was conducted by elements of 1st Canadian Division at Kitchener's Wood that evening. On 23 April the British formed an ad-hoc formation, 'Geddes Force', to mount further counter-attacks which, at great cost to themselves, hindered the German intention to develop their attack with XXVII Reserve Corps. The British Official History said these counter-attacks, made at the urgent request of the French ally, 'never had any prospect of success'.

On 24 April the next great gas attack, releasing a further 15 tonnes of chlorine, struck 8th Canadian Brigade near St. Julien. With only wet towels for protection to the mouth and nose, the whole of 1st Canadian Division was drawn into heavy defensive fighting which eventually cost them 1700 men killed, 1800 wounded and 1700 captured. The 50th (Northumbrian) Division of the Territorial Force, only three days in France, was rushed into combat and did remarkably well for such new troops in stabilising the line. This formation of Yorkshire, Durham and Northumberland units was not the first all-Territorial Force division to land in France, but it was the first to see such heavy fighting. In a confused stage of the battle, many ad-hoc British Imperial formations were employed to launch repeated counter-attacks, fighting under what the Official History describes as 'the shadow of defeat'. In this effort to check the enemy advance towards Ypres, 2400 regular troops were lost.[5]

On 26 April the Lahore Division of the Indian Corps was committed to a hasty attack that cost it 1700 casualties without even reaching the enemy front line. The British, Canadian, Indian, French and Belgian troops gave no ground during heavy enemy assaults but at great cost to the defenders. Despite his strong personal misgivings, General Sir Horace Smith-Dorrien, commander-in-chief of Second Army, was under strict orders from Field-Marshal Sir John French to keep up the counter-attacks. Smith-Dorrien repeatedly requested permission to shrink the Salient in order to conserve his troops and to consolidate his defences on a shortened frontage. Executive control of the fighting then passed to Lieutenant General Sir Herbert Plumer (V Corps) who began to organise a staged withdrawal to a newly prepared defensive line. It is not entirely clear why Plumer was able to order a withdrawal but not his army commander. Suffice it to say that Smith-Dorrien would not long remain in command.

The Salient Shrinks

After another costly failed attack by the Lahore Division, British GHQ authorised the evacuation of the apex of the Salient on 1 May 1915. The Germans used gas to make a heavy attack on Hill 60.

The next day, wind conditions were suitable for another major gas attack in the northern sector on British troops as they were in the act of withdrawing. The British and French infantry, however, were now getting used to this style of fighting and inflicted heavy losses on the enemy infantry. Despite fierce defensive fighting the evacuation of the Salient continued. Subsequent German artillery bombardment fell on empty positions.

On 5 May, the Germans advanced to contact to the new British line but were firmly halted in some very expensive fighting. On that day a large-scale gas attack on 5th Division at Hill 60 saw that feature lost to German assault. On 6 May Sir John French dismissed Sir Horace Smith-Dorrien and appointed Plumer to command Second Army. Germany's General Duke Albrecht von Württemberg believed that the shrinking of the Salient meant that the Allies were close to defeat and called in all available reserves for a renewed offensive.

[4] Chlorine proved less effective as a weapon than the Germans had hoped, particularly as soon as simple counter-measures, such as effective respirators, were introduced.

[5] This figure refers to the regular divisions involved, not the 50th Division.

Final Stages of the Battle

The major German attack north of the Menin Road on 8 May was preceded by very heavy, destructive artillery fire. The infantry assault was the largest to date in the battle and gained some initial success. The defence stabilised, helped by a remarkable stand by 80th Brigade, 27th Division, which earned the sobriquet 'Stonewall Brigade' that day. A two-mile (three kilometres) gap had opened in the British line and was only closed at great cost. At about 1930 hours a small advance by 10th Brigade, 4th Division, just east of Wieltje, caused a sudden panic in the German infantry (clearly at the end of its tether) which precipitated a general retirement of large elements of XXVI and XXVII Reserve Corps. The crisis of the battle had passed. On 9 May large-scale German infantry attacks were comprehensively defeated at every point.

By now the BEF was committed to offensive action in and around Aubers Ridge (and a new front had been opened at Gallipoli).[6] As a result, the British were hoping to wind down the fighting in the Salient. A relatively quiet period from 14 to 23 May, welcomed by both sides, was the prelude to the largest gas attack of the battle. On 24 May a gas cloud 40 feet (12 metres) deep on a front of 4½ miles (7.2 kilometres) stretched from just north of Hooge to just short of Turco Farm. The defenders, now wearing rudimentary gas masks, exhibited excellent gas discipline. While the Germans were able to take the important position of Mouse Trap Farm, the British infantry reported the large scale German infantry attacks as 'reluctant' and noted that their opponents had dug in well short of the British line. That evening (24 May 1915), Headquarters German Fourth Army issued a formal order halting all further attacks on the Salient. Mutual exhaustion had brought the Second battle of Ypres to a close.

Commentary

The Allied and the German armies still had a great deal to learn about the realities of mass industrialised warfare. The German offensive began as a strictly limited operation. Taken aback by the initial success of the gas weapon, the Germans were unable to immediately exploit the tactical advantage gained and to take Ypres by coup-de-main. Yet soon the Germans released extra formations into the fight and applied sustained pressure on an Allied defence, which was reeling from the novel situation in which it found itself. However, in the face of stiffening Allied resistance, the Germans were not able seize Ypres.

It is now widely recognised that the frantic effort by the Allies to contain the German attack by immediate and repeated counter-attacks was a costly error of judgement. The ground fought over was not of great tactical significance in the larger scheme of things and permission should have been given to retire to better, prepared positions sooner. Had that been the case, then the Ypres perimeter could have been better defended.

The Battlefield Today

Ypres is a major centre for the remembrance and exploration of the five great battles fought between 1914 and 1918. The first gas attack was in the vicinity of the German cemetery at Langemarck; the Canadian memorial at Vancouver Corner, just north of St Julien, marks the site of their dramatic defence on 23/24 April. Mouse Trap Farm, near Wieltje, has useful marker boards describing the fighting there. There is a well-deserved memorial to 50th Division at Oxford Road CWGC cemetery. Hill 60, in the south of the Salient, still provides good observation towards Ypres and the ground is covered with shell holes and craters from the fighting there.

John Lee

Vancouver Corner
© Barbara Taylor

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[6] See Chapter 8.

8. The Battles of Aubers Ridge and Festubert

(9 May and 15 – 27 May 1915)

Description	British	German
Commanders-in-Chief	Field Marshal Sir John French (BEF) General Sir Douglas Haig (First Army)	Crown Prince Rupprecht of Bavaria (Sixth Army)
Principal Forces Engaged	**British First Army:** I Corps (Gough) – 1st, 2nd, 47th & *1st Canadian Infantry Divisions IV Corps (Rawlinson) – 7th, 8th & 49th Infantry Divisions Indian Corps (Willcocks) – Meerut, Lahore & *51st Infantry Divisions	**German Sixth Army:** VII Corps – 13th & 14th Infantry Divisions 6th Bavarian Reserve Infantry Division 2nd Guard Reserve Division
Casualties	**Aubers Ridge:** 11,600 (killed, wounded & missing) **Festubert:** 16,600 (killed, wounded & missing)	**Aubers Ridge:** 1,500 (killed, wounded & missing) **Festubert:** 5,000 (killed, wounded & missing)
Consequences	After the defeat of Aubers Ridge, the British army shifted to more attritional tactics, emphasising prolonged artillery preparation and limited objectives. Inter-Allied cooperation became more difficult as a result of misunderstandings and disagreements during these two battles.	After Neuve Chapelle, the Germans placed more emphasis on field fortification but continued to rely on a strong forward defence rather than defence in depth. Aubers Ridge had little impact on the Germans' ability to move reserves to the French sector, but during the battle of Festubert German reserves were retained facing First British Army.

Aubers Ridge (9 May 1915)

Context

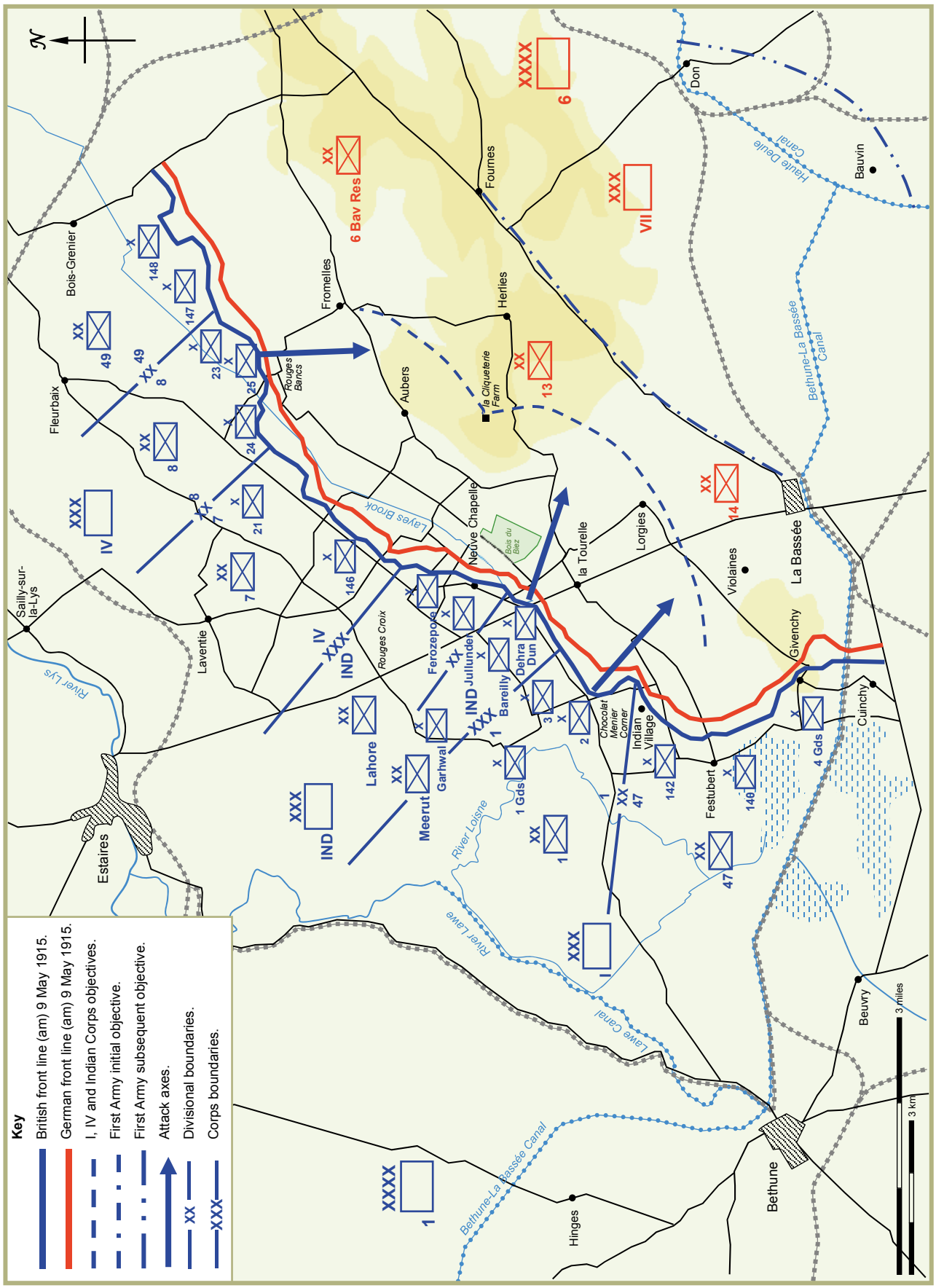
After the battle of Neuve Chapelle, General Joffre had a higher opinion of British capabilities and was prepared to include the BEF in his plans for a major offensive, which would relieve the pressure on the Russian army on the Eastern Front and even threaten the German position in northern France. He sought to seize Vimy Ridge north of Arras, which dominated the Douai plain.[2] He planned three coordinated attacks by French troops in May and asked Sir John French to assist with a fourth attack north of the French sector. French agreed and allocated the mission to Haig's First Army. The French wanted a sequenced offensive but bad weather caused delays and eventually all the attacks began on 9 May 1915.

The Plan

The British contribution to the Allied offensive was to be an operation building on the experience of the battle of Neuve Chapelle, involving three corps. As in March the artillery plan relied on a short, intensive surprise bombardment to destroy the German frontline trenches. The actual assault would be launched on either side of Neuve Chapelle village, aiming to link up on Aubers Ridge with a subsequent objective on the line Bauvin-Don further east. Each corps used one division to assault, with another holding the line on its flank and held a third division 3 to 5 kilometres in the rear as a second echelon. Although the potential exploitation force included five cavalry divisions, the reserve infantry divisions had been weakened by losses in the Second Battle of Ypres.

[1] *Indicates only in action during the Battle of Festubert, 15-27 May 1915.

[2] See the description of the Artois II offensive at Chapter 9.



Map 8.1 – The Battle of Aubers Ridge, 9 May 1915

Battle of Aubers Ridge. Lieutenant Colonel C. B. Vandeleur (23rd Bde HQ) briefs the 2nd Battalion, Cameronians (Scottish Rifles), on their role in the forthcoming attack. © IWM Q051621

The Battle

The bombardment, fired by 600 guns, began at 0500 hours on 9 May and became intense at 0530 when the infantry moved into No Man's Land, ready to assault at 0540. South-east of Neuve Chapelle, 1st Infantry Division (I Corps) and the Meerut Division (Indian Corps) attacked on a joint frontage of 2,400 yards with seven battalions in the first echelon. It was immediately apparent that the German defences had not been suppressed: intense machine gun and rifle fire halted the advance almost everywhere. Small parties of the Munsters and Northamptons somehow reached the German line but were soon wiped out. A renewed assault was attempted at 0700 but equally failed. By now over 50% of those who had crossed the British parapet had become casualties and the survivors, wounded or not, were pinned down in No Man's Land all day.

Reports reaching Haig at First Army headquarters did not accurately reflect the disaster that was unfolding. He organized a new attempt, which was launched in the afternoon from trenches congested with dead and wounded and unsurprisingly failed. 6,000 yards to the north-east, IV Corps had attacked with 8th Division on a 1,500 yard frontage. On the left, 2nd Rifle Brigade, 1st Royal Irish Rifles and 13th London (25th Brigade) all managed to secure footholds in the German front line, but elsewhere the wire had not been cut and the attacks failed. The British troops in the German line were then cut off by enfilade fire and new attacks were halted at the British front line, which was increasingly blocked by dead, wounded and arriving reserves. After nightfall the surviving British troops in the German line were withdrawn and IV Corps' reserve (7th Division) was moved south in the hope of launching a new attack under I Corps on 10 May. By the morning the scale of the casualties had become clear and the artillery also reported that ammunition stocks would not sustain a new attack. Operations were therefore suspended on the British front.

Commentary

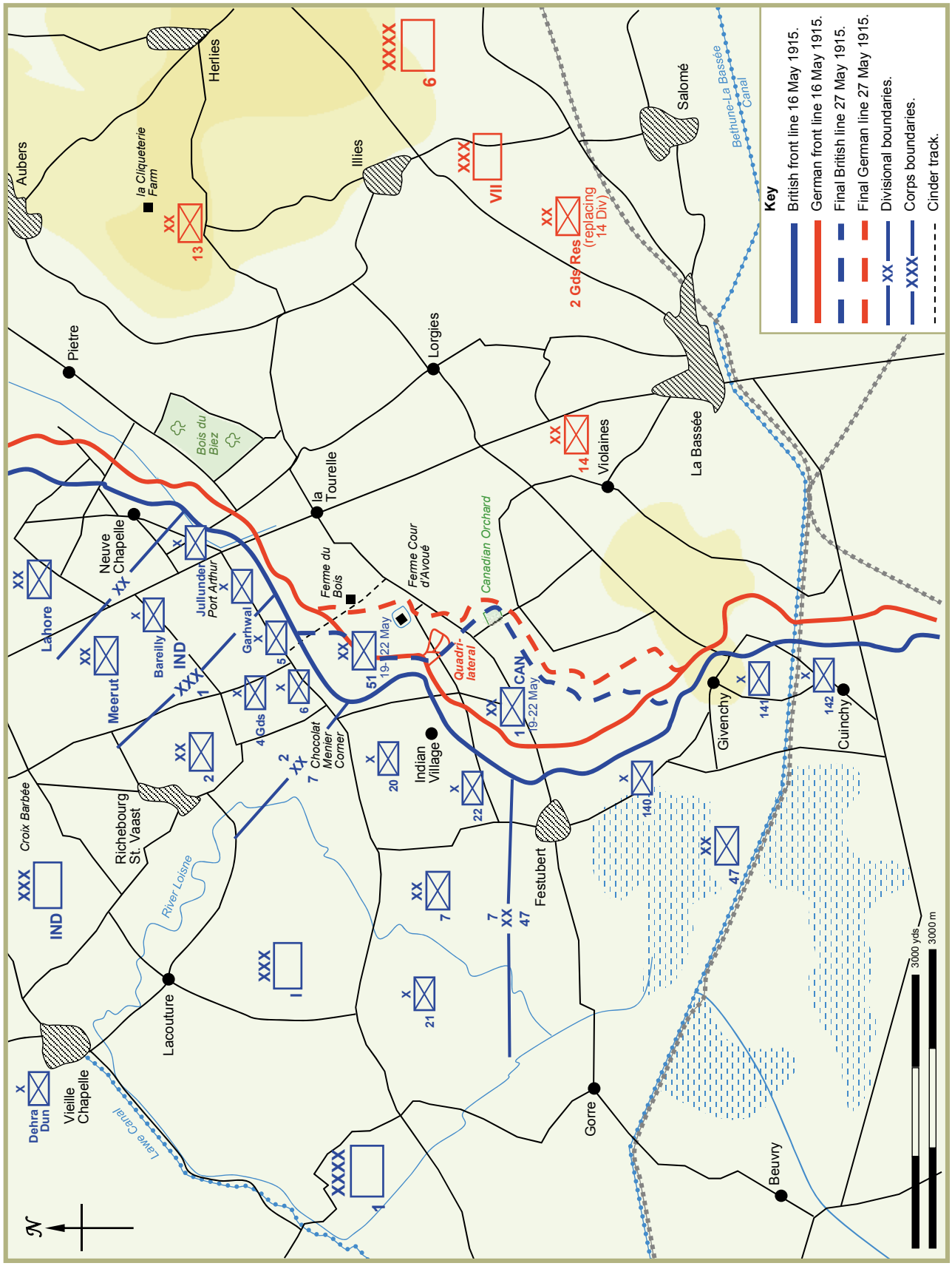
Although there was an initial attempt to blame the failure on ammunition shortages (the so-called 'Shell Scandal'), there is no doubt that the real cause was British over-confidence in the Neuve Chapelle style of offensive. It was assumed that a hurricane bombardment would once again devastate the German front line and staff work concentrated on improving the arrival of reserves to exploit the gaps created by the artillery. But the Germans had spent the weeks since Neuve Chapelle re-thinking and re-building their defences. The width of the forward line of breastworks was doubled or trebled and machine gun emplacements were built into them which were proof against anything but a direct hit. The wire defences were also thickened and often hidden in the ditches excavated to build the breastworks. More machine guns were placed in strong-points at salients in the line which enfiladed the front like the bastions of an Eighteenth Century fortress. The failure to discover how the Germans were re-acting after Neuve Chapelle, or even to ask the question, was the basic reason for the slaughter of 9 May, when over 11,000 men were killed or wounded in a few hours.

Festubert (15-27 May 1915)

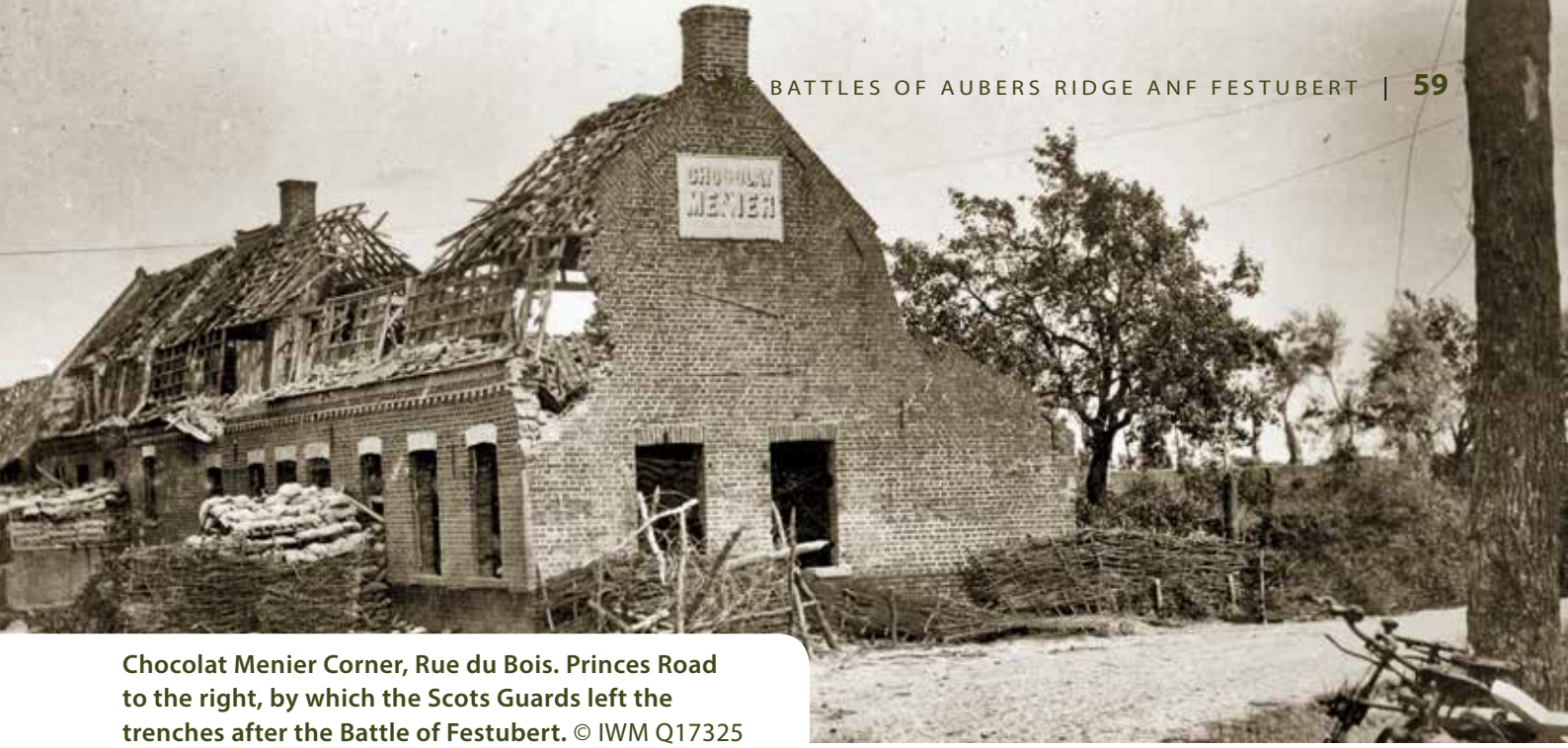
The Plan

The French army had abandoned hurricane bombardments as a result of their experiences in the previous winter and spring. Sacrificing the element of surprise they had

[3] See Chapter 9.



Map 8.2 – The Battle of Festubert, 16-27 May 1915



Chocolat Menier Corner, Rue du Bois. Princes Road to the right, by which the Scots Guards left the trenches after the Battle of Festubert. © IWM Q17325

preceded the attacks of 9 May 1915 with a deliberate artillery preparation lasting six days. They were rewarded with an initial success, which put Petain's XXXIII Corps on Vimy Ridge. But their reserves were held over eleven kilometres away and German counter-attacks restored the position.[3] Several days of attritional warfare followed and the French High Command, noting that German reserves were moving from the British sector, pressed for a new British attack. Although Sir John French was still fighting the Second Battle of Ypres, where he felt that his Allies were not contributing sufficiently, he accepted the need to support the main French effort in Artois and again the burden fell upon the British First Army.

A new attack sector was selected, south-west of Neuve Chapelle, in front of the village of Festubert. The German defences were believed to be weaker here and a two-day artillery bombardment was ordered to cut the German wire, destroy their breastworks and lower their morale. 433 guns and howitzers were used but only 83 were heavies; ammunition reserves were also depleted by the needs of the Ypres and Gallipoli operations. The British were no longer looking for a breakthrough but rather a 'deliberate and persistent attack', which would wear down the enemy and check reserves moving to the French sector. Air reconnaissance and air photography were used to produce more accurate maps for the artillery. Another innovation was that the operation would begin with a night attack by the 2nd and Meerut Divisions in the north. At dawn 7th Division would attack on their right flank.

The Battle

The preliminary bombardment began on 13 May. Over 100,000 shells, more than a third fired by heavy guns, struck a 5-kilometre section of the German front. But a significant proportion failed to explode and the start of the operation had to be delayed for 24 hours. On the night of 15/16 May, 10,000 British troops moved into No Man's Line. On the right, 6th Brigade (2nd Division) secured its objective with little loss but on the left the Germans had been alerted by poorly-planned diversionary operations in the adjoining divisional sector. The attackers were detected and soon pinned down under heavy rifle and machine gun fire. An attempt to renew the attack with reserves at dawn was immediately checked and Haig closed down the attack on this sector, concentrating efforts where some success had been achieved. 7th Division had launched its attack at dawn and had pushed 500 metres or so into the German position on its right. But a gap remained to the 6th Brigade penetration where the Germans had a formidable strongpoint known as the Quadrilateral. British resources were focussed on eliminating this gap and a new effort was required for the morning of the 17 May. Misleading progress was made until it became obvious that the Germans were withdrawing to a new line which had not been detected.

In keeping with the policy of wearing down the Germans to assist the French, First Army continued its offensive. The problems of 18th May were typical. A deliberate bombardment followed by an infantry attack was ordered for the morning, but rain and mist made proper observation impossible and both bombardment and attack were postponed. At 1355 hours Haig ordered the deliberate bombardment to begin at 1430, becoming more intensive between 1600 and 1630 when the infantry were to advance. Incidentally, no 4.5-inch howitzer ammunition was available for the bombardment. The timings were

impossible, the bombardment did not begin until 1500 hours and orders took even longer to reach the front line infantry. Once again the British assaults were checked by German enfilade machine gun fire within a few yards. Whatever the attrition on the Germans may have been, the attacking British formations were now exhausted.

On 19th-20th May 1915, 2nd and 7th Divisions were withdrawn and replaced by 1st Canadian Division and 51st Highland Division, which comprised 'Alderson's Force'. The Canadians were still recovering from their losses at Ypres and 51st Division was practically untrained and very green, according to Haig. Nevertheless both formations began a series of attacks, which gained some ground in the new German line. The Canadians occupied the feature known as the Orchard (re-named Canadian Orchard). On the night of 25th May, the Territorials of the 47th Division joined in, occupying and holding nearly a kilometre of German front line in the south. It was now clear to Sir John French, however, that the diminishing manpower resources of the BEF and the even more critical ammunition shortages made further offensives pointless. He concluded that he could best support the French by taking over more of the line and relieving French divisions to join the struggle for Vimy Ridge which continued until 18 June 1915.

Commentary

Although Festubert demonstrates the British willingness to learn from experience and in certain areas, such as the use of air power, significant advances were made, it is clear that the BEF's effectiveness was limited and, if anything, decreasing. The need for a higher proportion of medium and heavy artillery was becoming obvious as German defences were improved. The new munitions factories were also not yet producing reliable ammunition in the quantities required by the new tactics. Although some new formations were arriving in France they were poorly trained and naturally lacked experience. A common feature of the Battles of Aubers Ridge and Festubert was not only the disproportionate losses relative to the Germans, but also the heavy losses at battalion command level: this not only made it more difficult to improve standards at unit level, but also reduced the pool of experienced leaders who could take command of the new formations at brigade level and above. Improvement would be a long, slow process.

The Battle of Festubert. View of a church in Bois-Grenier, 20th May 1915. © IWM Q51640

Michael Orr

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9. The Second and Third Battles of Artois

(Artois II: 9 May – 18 June & Artois III: 25 September – 15 October 1915)

Description		Allied	German
Commanders-in-Chief		General Ferdinand Foch, Provisional Army Group North General Victor d'Urbal, Tenth French Army General Sir Douglas Haig, First British Army	Prince Rupprecht of Bavaria, Sixth German Army
Principal Forces Engaged	**Artois II** 09/05 attack	French Tenth Army: five army corps and one cavalry corps, comprising 18 infantry divisions and three cavalry divisions; 792 field guns and 283 heavy guns.	Elements of Sixth Army. Initially four infantry divisions; a two further on the evening of 9 May 1915.
	16/05 attack	Six army corps, comprising 23 infantry divisions and three cavalry divisions. 805 field guns and 355 heavy.	16 or 17 infantry divisions
	(whole Artois II)	BEF. The Battle of Aubers Ridge, 9 May 1915: First British Army of three corps (I, IV and Indian) – six infantry divisions.	
	Artois III 25/09 attack	French Tenth Army: six army corps and one cavalry corps, comprising 20 infantry divisions and three cavalry divisions. Total of 1650 British and French guns.	8 infantry divisions 475 guns (all calibres)
	11/10 attack	25 French infantry divisions	21 divisions, 1200 guns
	(whole Artois III)	BEF. For the Battle of Loos: First British Army.[1]	
Context		After the failure of winter offensives, the French High Command wanted to help the Russians and Serbs, and to encourage Italy to enter the war. Joffre presses for a massive commitment of the British army on the continent. He has the support of Field-Marshal French, who disapproves of the peripheral strategy advocated by Lord Kitchener.	In January 1915, after the ease with which the Germans countered the French offensive of December 1914, Falkenhayn decided to make his main effort on the Eastern Front in order to break Russia's offensive power. At the beginning of May 1915, success is achieved with the breakthrough at Gorlice-Tarnów. Germany remains on the strategic defensive in the West throughout 1915.
Casualties	**Artois II**	French: 102,500 of which 35,008 killed British: 32,000	73,072
	Artois III	French: 48,230 of which 18,567 killed and missing British: 61,713	56,000 (25/09 to 25/11)

[1] For the British order of battle and details, see Chapter 10, the Battle of Loos.

Description	Allied	German
Consequences	The failure of the offensives strained the Anglo-French Entente and led to a growing mistrust between politicians and the military. General Haig replaced Field-Marshal French. In France, the government changed under parliamentary pressure. Joffre was protected by the prestige that he earned during the victory on the Marne in September 1914. He decides to abandon offensive operations 'at all costs' for a more methodical approach, and in doing so achieves better coordination between the Allies during 1916.	The offensive of Artois II does not prevent the Germans from continuing operations on the Eastern Front against Russia. Furthermore, Artois III does not stop them sending more troops to fight in Serbia. The French determination to fight without apparent regard to casualties gives the Germans the idea of attacking the prestige target of Verdun in 1916, which must be defended, in order to 'bleed white' the French army in a battle of attrition.

Introduction

By the spring of 1915 a continuous front of 750 kilometres stretched from the North Sea to Switzerland. The tactical stalemate that occurred at the end of 1914 resulted from the balance of advantage shifting in favour of the defence, which could be rapidly reinforced by good strategic mobility, over an attacker who was poorly protected, advancing on foot, difficult to replenish and insufficiently supported by artillery.

Notwithstanding this change in the character of warfare, General Joseph Joffre, commander of the French armies, was still keen on mounting a decisive offensive. Foch, commanding the Provisional Army Group North, hoped to achieve this intent by seizing the dominant position of Vimy Ridge. The feature, which lies 70 metres above the northern mining plain, had been taken by the Germans in October 1914 during the 'race to the sea'.[2] In Foch's concept, effective fire support could be provided from this dominant position to the infantry, whose rapid reinforcement would prevent any recovery by the enemy. Exploitation to the east by the cavalry could then follow.

Despite strenuous efforts both in May and June (Artois II) and in September-October (Artois III), Vimy Ridge was not conquered while losses steadily accumulated, helping to make 1915 the deadliest year of the Great War for the French armies. Yet the French High Command, who considered that this outcome was both predictable and inevitable, still believed the attacks were both necessary and useful. According to this view, the offensives had helped alleviate the situation in Russia, had encouraged Italy's entry into the war and denied the Germans the initiative in the West. The position and reputation of both General Joffre and General Headquarters (GHQ) within the armies of the Entente were further enhanced.

The losses amongst the French armies in 1915, however, were much heavier than those of the Germans, which (contrary to those announced by GHQ as 300,000 per month) did not exceed 150,000 during the most difficult period from 25 September to 25 November 1915, which included both the major offensives of Artois III and Champagne II. It is therefore pertinent to question the usefulness of this persistent pursuit of over-ambitious goals by the French High Command and to consider whether this approach was not actually counterproductive.

The Battles

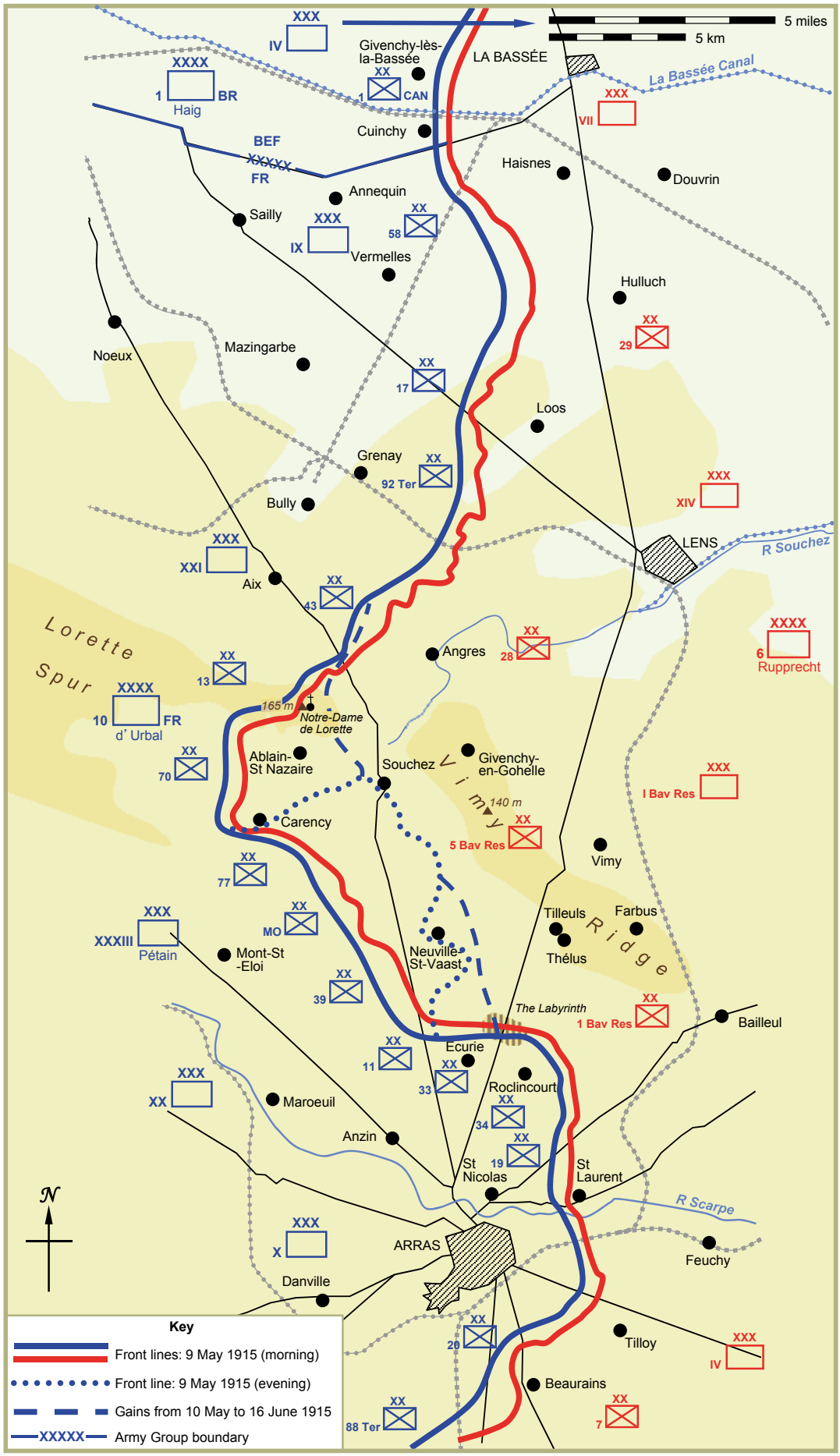
Artois II: May-June 1915

The desire to achieve strategic decision, which generated the plan to seize Vimy Ridge, was not without its attendant risks. It led the High Command to mount successive attacks, rapidly losing the effect of surprise in the process, which increasingly limited the effectiveness of operations between the initial attack of 9 May and the final attack on 17 June 1915.

Supported by the attacks of three British army corps on the plain between Aubert and La Bassée (the battles of Aubers Ridge, 9 May; and Festubert, 15-25 May 1915), the French offensive was conducted by five army corps, totalling some 18 divisions. The infantry attacked in three waves. Although alerted by an artillery bombardment beginning on 6 May, and the immediate preparation of three hours' fire, which preceded the assault, the Germans were still surprised by the violence of the attack. The defenders could not prevent the Moroccan Division of General Pétain's XXXIII Corps from making an unprecedented advance of four and half kilometres, reaching their initial objective (Point 140) on Vimy Ridge, and then exploiting further in some areas.[3]

[2] This was part of a series of battles. For his valiant role in the defence of Arras, General Ernest Jacques Barbot earned the command of a division, which was named after him, la Division Barbot. He was later killed on 10 May 1915 during the Second Battle of Artois near the head of his division.

[3] There was also uncertainty surrounding the exact time and date of the attack owing to the adverse weather. This had thrown the Germans off-guard.



Map 9.1 – The Second Battle of Artois, 9 May – 18 June 1915

Failures suffered on the flanks lessened this transitory success. The main German positions held: their strength had been underestimated due to over-optimistic intelligence analysis. In the north, heavy German machine-gun fire stopped the progression of XXI Corps on the crest of Notre-Dame de Lorette, and the fortified villages below could not be taken (Carency, Ablain-Saint-Nazaire, Souchez). From there, the defenders were able to attack the flank and rear of the XXXIII Corps, which led to the withdrawal of its units to the foot of the ridge. In addition, the Germans had massed several artillery batteries at La Folie, a farm hidden behind the southern shoulder of Vimy Ridge. Relatively unscathed by the French bombardment, the German guns were able to break up many French attacks. In the south, the machine-guns in the Labyrinth stopped the advance on the right of the XX Corps. The overall advance of Tenth Army was limited to a depth of just two kilometres (along a front of 5.4 kilometres) instead of the twelve kilometres' penetration originally planned for the main effort.

The French High Command considered that the failure of the attack was due mainly to the remoteness of the XXXIII Corps reserves, which, in consequence, intervened too late. During the following days, the French repeatedly raised the tempo of the assault, hoping that the enemy would be worn down from the repeated blows it would suffer. In reality, however, the enemy benefited from having excellent lines of communication across the Lens plain behind the front, enabling him to reinforce rapidly, especially since the offensives led by the British in a flat, wet and unforgiving ground did not demand the use of German reserves. Consequently, the attackers who out-numbered their opponents by 4:1 on 9 May were no more than 2.7:1 by 15 May, and the increased strength of the German resistance enabled them to withstand the repeated French attacks.

Intervening directly in the conduct of operations, GHQ then advocated detailed set-piece operations in order to secure a line of departure cleared of all obstacles, which had impeded progress towards the ridge during the last attack. However, this task proved much more difficult than expected. The inability to reach the German positions, due to the lack of indirect fire, required the French to attack simultaneously from different axes through coordinated actions.[4] Getting anxious by the delay in making progress, General d'Urbal estimated that by masking – if not reducing – the remaining pockets of resistance, such as that at Souchez, the French could continue advancing without difficulty. If the enemy could not be defeated in situ, then his positions would be by-passed in order to maintain progress. Such localities would fall later through encirclement.

Preceded by a British attack[5] that this time fixed part of the German reserves (two divisions), a new general offensive began on 16 June 1915 with no immediate artillery preparation in order to better surprise the enemy. Yet the attack was blocked everywhere, except in the northern part of the zone of action of the XXXIII Corps, where several battalions advancing on a front of a few hundred metres once again reached their objectives. Their situation exposed them: General Pétain, having refused to release any further reinforcements, ordered their withdrawal.

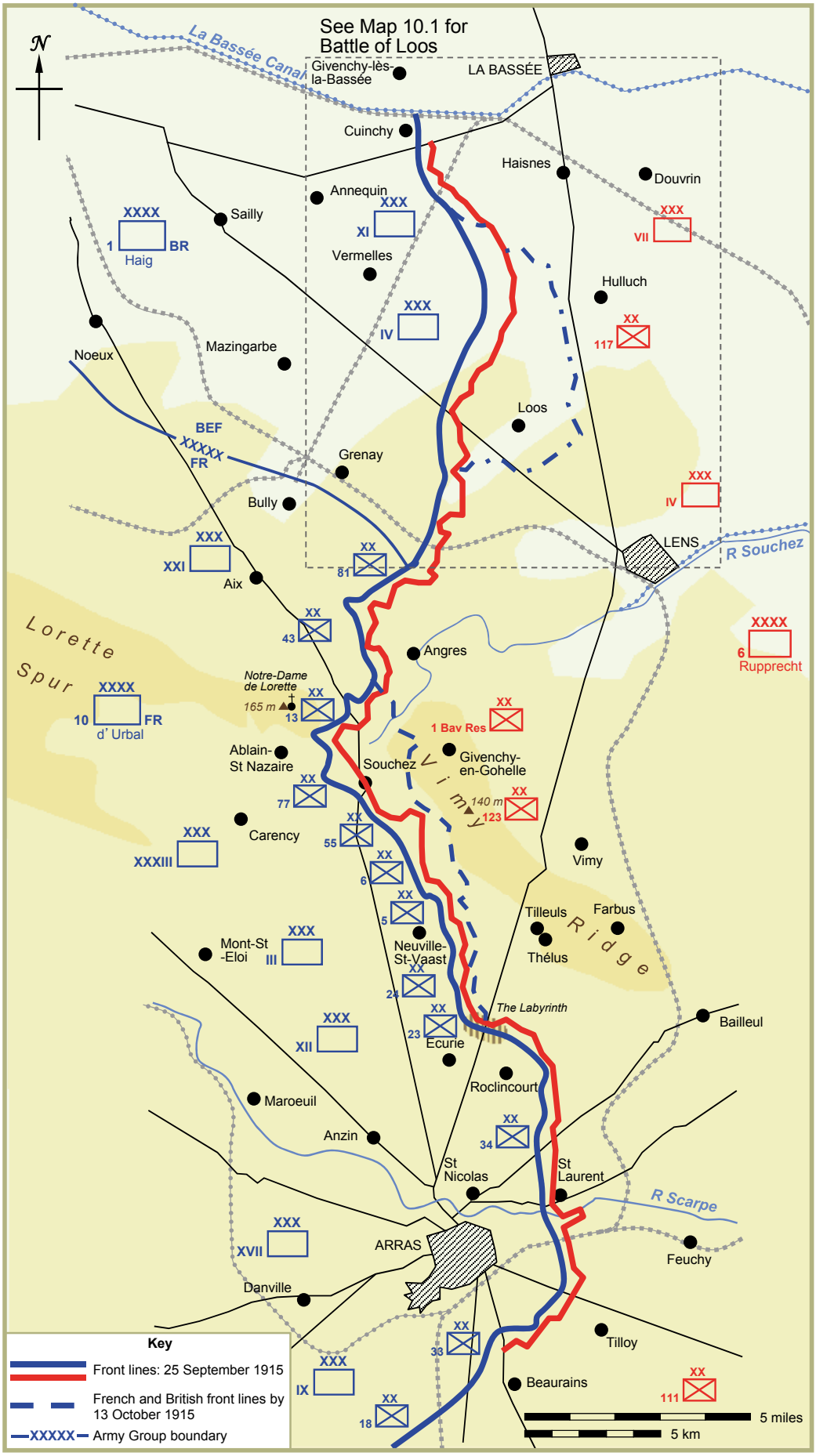
The French High Command then planned to take the necessary measures to establish a start line free of any obstacles. Depletion of troops and consumption of ammunition were such that the French had to halt operations on 18 June. The determination of the High Command to continue the offensive despite its diminishing returns meant that future operations would suffer the consequences. Reconditioning of troops, and especially the replenishment of the Tenth Army's ammunition stocks, necessitated significant delays before it was possible to start any new large-scale operations.

Artois III: September-October 1915

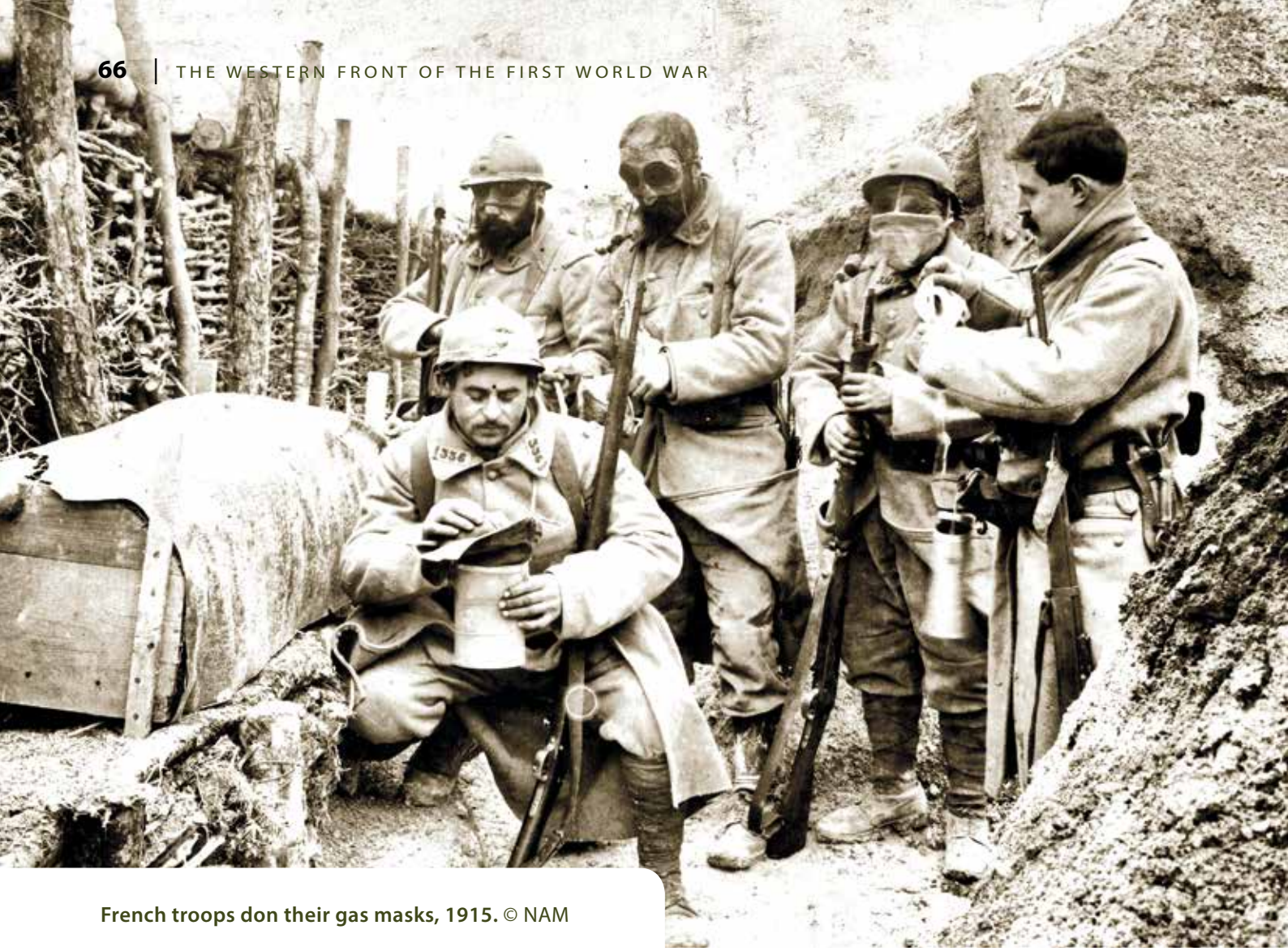
Despite the failure of Artois II, General Joffre was determined to resume the offensive. The partial success of the attack on 9 May had strengthened the mistaken idea that a breakthrough had been achieved. Continued pressure for results from the political leadership also encouraged this unduly optimistic thinking. The High Command was becoming all the more confident that the French army would now have the necessary means with which to conduct a new attack. The creation of new formations, combined with the arrival of large British reinforcements, which could take over from French units in the Loos sector south of La Bassée Canal, and the supporting attack which was to be launched by the Second Army south of Arras, now prompted Joffre to consider mounting several simultaneous offensives, through which he hoped to defeat the German reserves. Considerations such as those of General Pétain, who felt it necessary to

[4] One significant feature of the French army's final attacks (16-18 June) during the Second Battle of Artois was the first Allied use of poison gas, which is not mentioned in *The French Army in the Great War*, vol. III. Unlike the Germans at Second Ypres (22 April) and the British at Loos (25 September 1915), who both released chlorine from cylinders, the French made the first use of gas shells, focusing the employment of this new weapon on the neutralization of German artillery batteries. See Jonathan Krause, 'The Origins of Chemical Warfare in the French Army', *War in History* 20(4), pp. 545-556.

[5] This was the limited, costly and ultimately unsuccessful attack at Givenchy-lès-la-Bassée on 15-16 May 1915 involving 7th, 51st (Highland) and 1st Canadian Divisions of Rawlinson's IV Corps.



Map 9.2 – The Third Battle of Artois, 25 September – 15 October 1915



French troops don their gas masks, 1915. © NAM

abandon the idea of a breakthrough offensive as soon as surprise ceased to have effect, were discarded.

The difficulties encountered during the spring offensive led Joffre to choose Champagne, where the villages were relatively well spaced out, as terrain in which to conduct the main effort. He did so in spite of the opposition of Foch who felt that there was no better objective than Vimy Ridge to obtain a strategic result.[6] Joffre decided that Artois would be the scene of a powerful secondary action. Field-Marshal Sir John French acquiesced to General Joffre's request that the First British Army would be actively involved in this new offensive, attacking in the Loos sector.

The time taken in the replenishment of ammunition caused the postponement of the offensive from late July to mid-September. The Germans, who until then were absorbed by their activities on the Eastern Front, now took the opportunity to bring four divisions to France and to improve their defences. This effort included constructing a second position located on the reverse (eastern) slope of Vimy Ridge, out of range of the French artillery. Notwithstanding the enemy's reinforcement, the French High Command persisted in the idea of mounting a breakthrough attack followed by exploitation. Foch hoped that by strengthening the artillery, by improving aerial observation and by deploying reserves nearer the front it would become possible to provide the continuous and intense effort necessary to take the ridge. Significant obstacles, however, remained to be eliminated with part of Souchez and the Labyrinth in particular lying in German hands. Accordingly, all of the attacks on 25 September once again proved extremely expensive for the French Tenth Army.

The expectation of success was nevertheless such that General d'Urbal added credence to rumours that suggested a breakthrough had been achieved in the south, in the area of Linden, which was the main effort. Reinforcements were then pushed forward where they intermingled with the first waves, causing great confusion, so that the Germans could not be dislodged from Vimy Ridge. It was on the left of the Tenth Army that

[6] General Noël Édouard Castelnau, commander-in-chief of the French Central Army Group, had convinced Joffre that an attack in Champagne would be highly successful. The French High Command also thought the main effort should be there because of the concentration of German forces in Artois. For the debate between the French senior commanders as to where best to attack in the summer of 1915, see Doughty, pp. 170-175.

the most significant progress was made. After four days of fierce fighting, Souchez had finally been taken as was the entire first German position, farther north. The Tenth Army now had gained control of almost all of the line of departure it had fought for since 15 May 1915. In addition, the British First Army had achieved a significant result in the area between Loos and Hill 70, advancing for several kilometres and threatening to outflank the German system of defence. Accordingly, Foch hoped to resume the offensive with a good chance of success. Attacking during the first days of October, French and British forces could effectively combine their efforts with those armies operating in Champagne.

The British, however, were not able to immediately resume the offensive: favourable positions were still held by the Germans on their flanks. Some units of the French Tenth Army also remained depleted, while weather conditions deteriorated. Aggravated by a shortage of ammunition, this situation led to General d'Urbal to deferring the resumption of the offensive. Despite opposition from Foch, the attack was delayed from 5 to 11 October 1915, with the sole objective now of taking Vimy Ridge. Meanwhile, preparations were disrupted by German attacks. The offensive, which achieved no gains, was closed down by 15 October. It was finally in April 1917 that Vimy Ridge was captured by Canadians.[7]

Commentary

The continuing quest for a decisive victory in Artois, combined with the growing political impatience, led the French High Command to push on with these attacks and to exert ever increasing levels of pressure on subordinate levels of command, which did nothing to encourage the free flow of accurate information. It gave rise to an exaggerated reliance on the importance of partial successes and increased reliance on hearsay as to the fulfilment of aims.

The practical realities of this approach to military operations caused immense losses to the French army. Contrary to the position taken by historians who are partisans of a 'learning curve', the experience of 1915 unnecessarily delayed the adaptation of French and British armies to the new conditions of the war. It was not until December 1915, after the failed attacks of Artois and Champagne, that the high commands of both armies began to admit the counterproductive nature of attacks pursued 'at all costs'. Lessons had indeed been learned, but at a very high price. However, it did not lessen faith in the idea that a major offensive would finally achieve victory. On the French side, it was not until the shock of the failure on the Chemin des Dames in April 1917 that the approach of more realistic, limited 'bite and hold' operations, as advocated by General Pétain in the summer of 1915, was finally adopted.[8]

The Battlefield Today

The heights of Notre-Dame de Lorette offer extensive views over the plain of Lens. It is clear that the occupation of this feature was necessary in order to overcome German resistance in the villages below, which in turn impeded French progress towards securing Vimy Ridge. The heights are now occupied by the National Cemetery of Our Lady of Lorette, where 20,000 identified and 22,000 unknown French soldiers are buried. This is the largest necropolis in France. In addition, the following places are worth visiting:

- The German military cemetery at Neuville St. Vaast is the largest German cemetery in France with the remains of 44,833 soldiers killed in 1914-1915 and 1917;
- The Monument to the Moroccan Division at Vimy in memory of the fallen of 9 to 11 May 1915;
- The Mémorial Company Nazdar, a Czechoslovak cemetery, and the monument to the Polish volunteers at Neuville St. Vaast;
- The Monument to the Glory of the Barbot Division at Souchez;
- The statue of General Maistre at Ablain-Saint-Nazaire and the monument to Lieutenant Defrasse at Aix-Noulette.

(Additional information on the website Memory of Men).

Christophe Gue

[7] See Chapter 13.

[8] Editor's Note. The more successful French attacks of 1 July 1916 at the Somme, and later in the year during the counter attacks at Verdun, pointed towards a new tactical approach, employing much more effective artillery preparation and rolling barrages, indicating that some pertinent lessons had been absorbed in 1915 and applied during 1916. Indeed, it could be argued that the difference in the fortunes of the British and French armies at the Somme in 1916 showed that the French were learning faster than their British counterparts.

Notre-Dame de Lorette © Wikipedia Commons

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10. The Battle of Loos
(25 September – 15 October 1915)

Description	British	German
	General Sir Douglas Haig (First Army)	Crown Prince Rupprecht of Bavaria (Sixth Army)
Principal Forces Engaged	**British First Army** I Corps: 2nd, 7th, 9th & 28th Divisions IV Corps: 1st, 15th & 47th Divisions XI Corps: Guards, 12th, 21st, 24th & 46th Divisions	**German Sixth Army** IV Corps: 7th, 8th, 117th & 123rd (Saxon) Infantry Divisions VII Corps: 14th Infantry Division X Reserve Corps: 2nd Guards Reserve Division Guards Corps: 1st & 2nd Guards Divisions Elements of II Bavarian Corps
Context	The largest of a series of four offensives launched by the BEF in 1915, generally in support of French attacks. It was noteworthy for the first use of poison gas by the British army and the first deployment of Territorial Force and New Army formations on a large scale.	The German army was fighting a defensive battle on the Western Front for most of 1915, while attempting to win a decisive victory against Russia. In response to developments in Allied offensive tactics, the German army was obliged to abandon its policy of forward defence and develop a doctrine for defence in depth.
Casualties	50,380 (killed, wounded & missing)	German: 26,000 (estimated total)
Consequences	The disappointing outcome, marked by failures in staff work, led to the recall of the C-in-C, Field-Marshal Sir John French. The battle also showed that the British army had still much to learn in how to conduct an offensive operation against a well-prepared and determined enemy.	Although the German army could draw some comfort from the generally successful defence, the battle showed that the BEF was growing in strength and would one day become a potent foe, as evidenced at the Battle of the Somme in 1916.

Introduction

British plans on the Western Front during 1915 were largely determined by the requirements of alliance warfare. Both the British and French governments wished to help their Russian allies, who were coming under increasing pressure from a series of German and Austrian offensives. Furthermore, General Joseph Joffre, the French commander-in-chief, saw the German concentration of forces on the Eastern Front as an opportunity to be exploited by seizing key ground in France. He requested British assistance and Field-Marshal Sir John French, the British commander-in-chief, felt obliged to agree, despite his concerns about German pressure on the Ypres Salient in April and May.

On 9 May 1915, the French began a series of attacks (known as Artois II) north of Arras, striving to capture the dominating Vimy Ridge. A simultaneous attack at Aubers

by Haig's First Army failed on the first day in the face of strengthened German defences. A new attack at Festubert on 16 May, after a 3-day bombardment, brought some early success but made no significant advance.[1] In June, Joffre abandoned the attempt to secure Vimy Ridge but began planning a new attack in which a renewed assault in the north would be combined with a major offensive in the Champagne region to the south. A British attack to support the French Army's northern offensive, Artois III, due to be launched in September, was requested and agreed without much enthusiasm.

The Plan

Joffre pointed out the front between Loos and the La Bassée Canal as the most useful place for the British attack. General Sir Douglas Haig, whose First Army had just taken over this sector, did not consider the flat terrain suitable. It was difficult to deploy artillery forward, where the guns could cut the German barbed wire effectively. This area was also a mining district and littered with slag heaps and small villages which restricted manoeuvre. French sympathized but felt obliged to conform to Joffre's wishes. Haig was also concerned about his lack of artillery and reserves. The main attack sector was 10.2 kilometres wide and only 533 guns were available to cover it. This artillery concentration represented about a third of the density available at Neuve Chapelle; to compensate for this lack the preliminary bombardment was extended to four days. However, the limited ammunition reserve meant that field guns were restricted to 150 rounds per day and heavy guns to 90 rounds. The German defences were now much stronger. In particular, a second defence line had been prepared, well-wired and running on a reverse slope. British artillery could not engage it effectively without re-deployment.

The inadequacy of the artillery support was recognised in advance. For the first time, however, the British were to use poison gas. It was hoped that a 30-minute discharge of chlorine gas from cylinders in the British line would degrade the defenders' powers of resistance. Yet there was insufficient gas available for a continuous discharge, even if the wind strength and direction were favourable.

The original plan was for two corps, I Corps (left) and IV Corps (right), attacking on comparatively narrow frontages, each with two divisions assaulting and one held in reserve. However, that would have left untouched the central sector from which the Germans could enfilade the attackers. It was therefore decided to attack across the whole front, using all six divisions in the initial assault, even though this deprived the attacking corps of their reserve divisions to form a second echelon of the attack and excessively diluted the artillery support. No real reserve was available at Army level, but the newly formed XI Corps was retained under French's command. It was understood that at least two divisions would be released to Haig, but the timing of this move was left unclear and the divisions were deployed well to the rear. Moreover the two divisions concerned, the 21st and the 24th, had only very recently arrived in France and had never seen action before. They were New Army divisions, with a very inadequate cadre of professional commanders and staff officers.

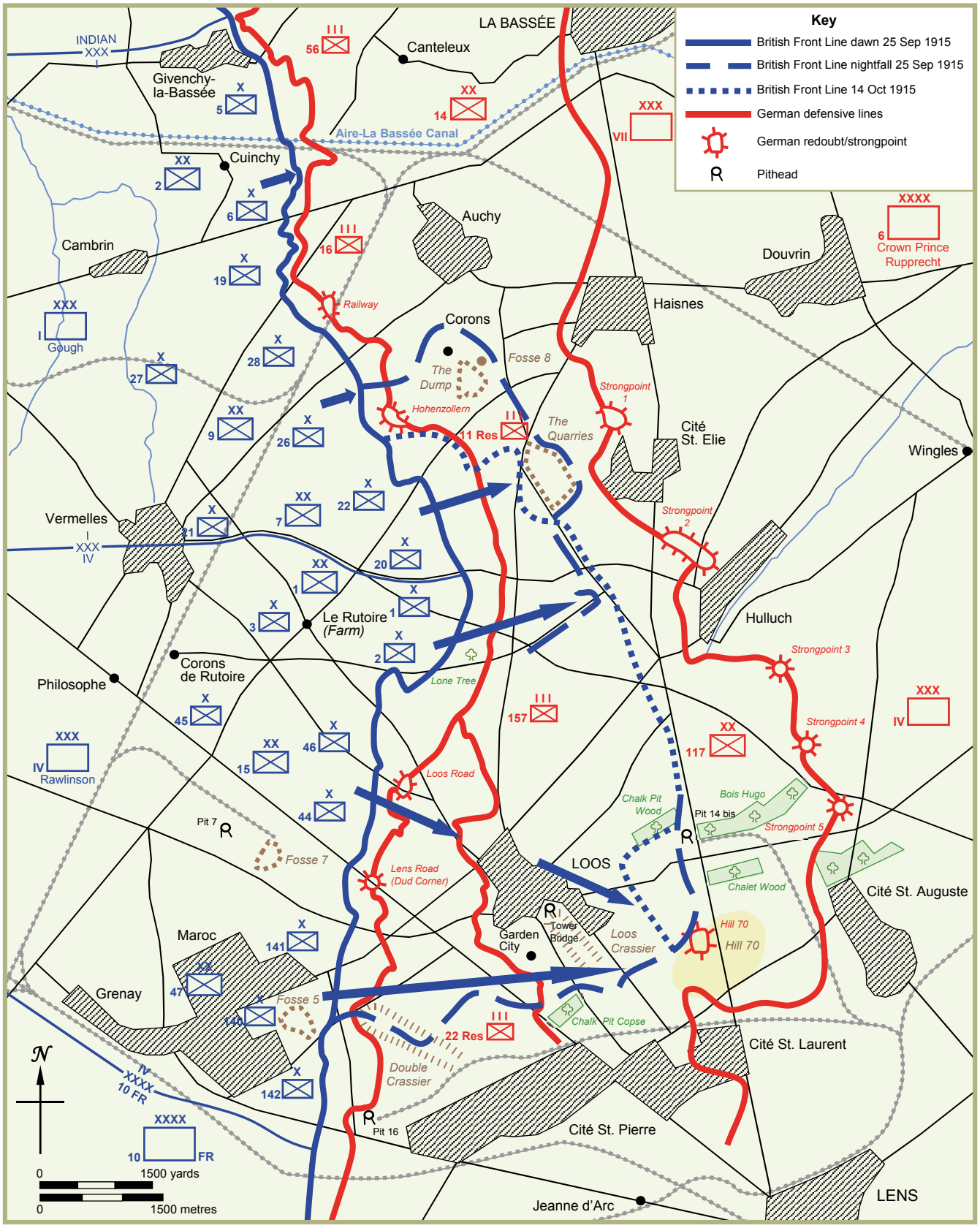
The Battle

The bombardment began on 21 September 1915 and conditions were favourable for the first two days. Then the weather deteriorated and air observation became more difficult. The bombardment was concentrated in the daylight hours with harassing fire at night. The latter could not prevent the Germans repairing their defences. Wire-cutting was successful over much of the front line but failed in some places. The wire of the German second line was almost untouched. During the night of 24th/25th September the weather conditions were only marginally suitable for the gas but by dawn the wind appeared favourable. At 0550 hours an intense bombardment of the German front line was accompanied by the release of gas. At 0630 hours the infantry began to advance into the cloud of gas and smoke as the artillery lifted to form a barrage blocking movement to or from the German front line.

The initial assault on the morning of 25 September was most successful in IV Corps's sector in the south, where the gas was most effective. The London Territorials of 47th Division secured the British right flank in the slag heaps south of Loos (the Double Crassier and the Loos Crassier). The 15th Division, a New Army division from Scotland, broke through the German front line and occupied Loos. In the process, units became mixed up and further advance towards Hill 70 was disorganised, with exposed flanks, especially on the left where 1st Division's attack had been checked by the German redoubt at Lone Tree. In this sector also the gas was less effective and much of the wire was uncut.

In the I Corps sector in the north, 7th Division had a hard fight but broke through the first line of trenches. On its left, 9th Division (another New Army Scottish division) had more difficulty. The Hohenzollern Redoubt was captured but the German defences to its north proved too strong and an order to renew the attack at noon merely increased

[1] See Chapter 8.



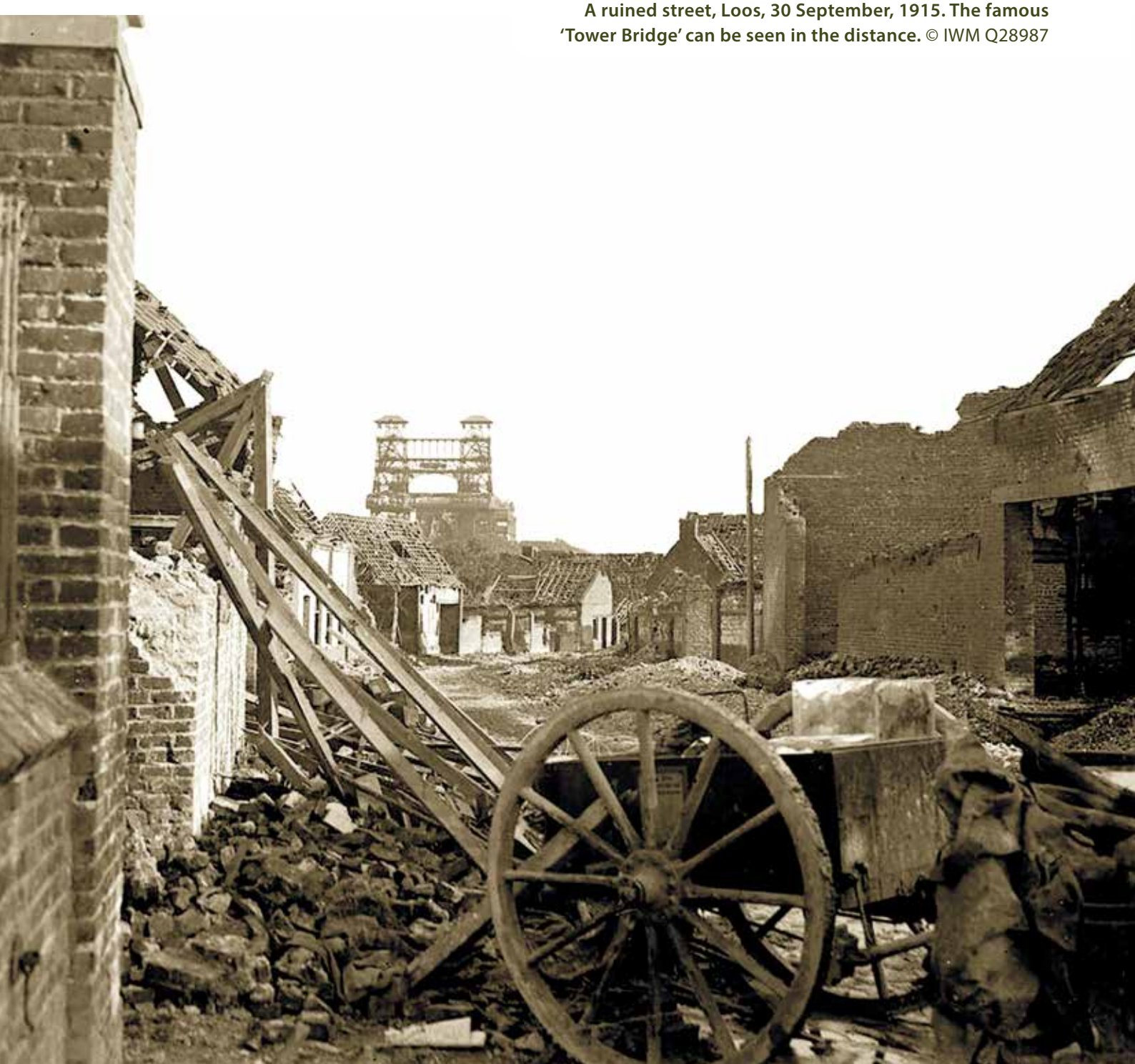
Map 10.1 – The Battle of Loos, 25 September – 15 October 1916

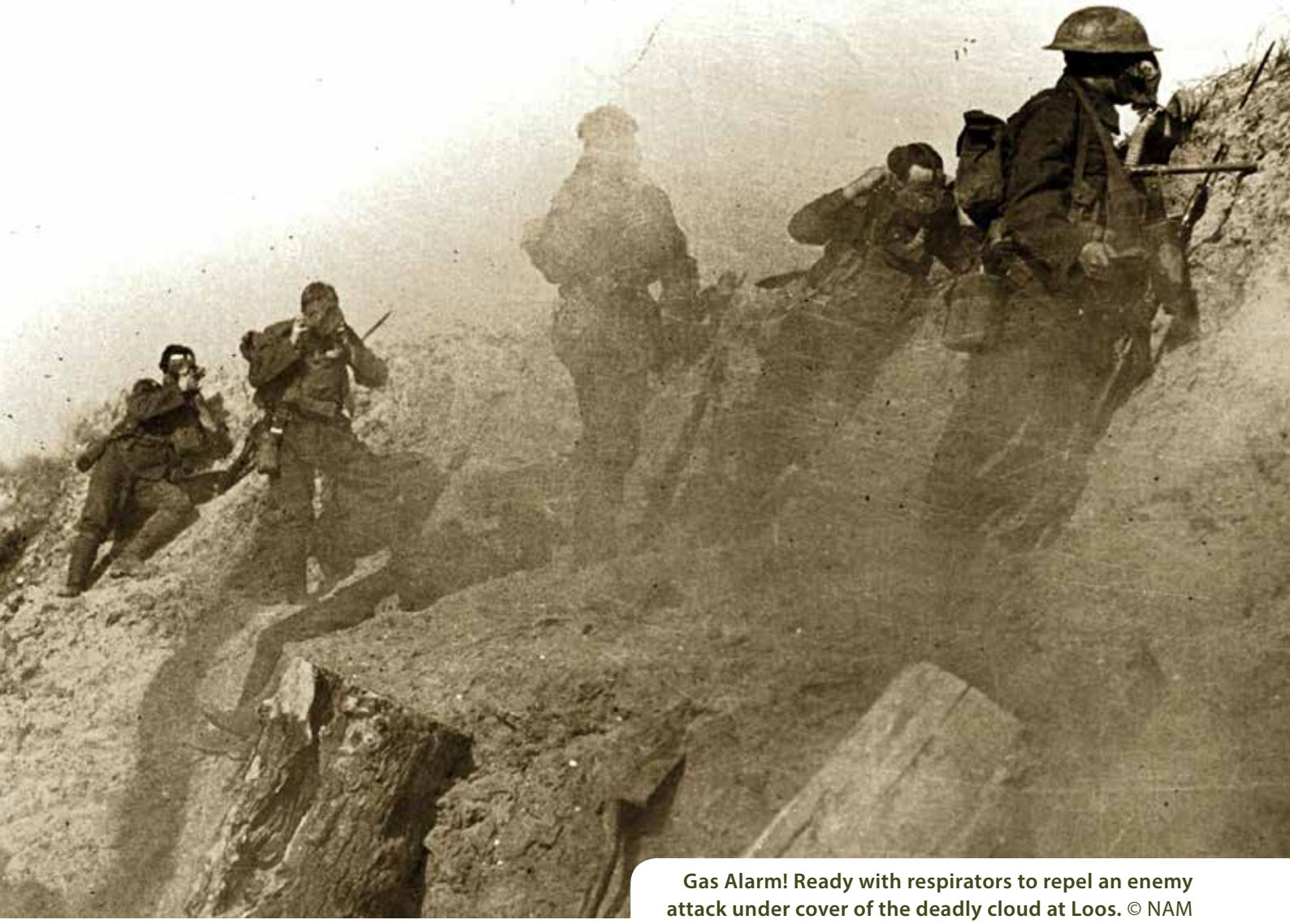
the slaughter. The 2nd Division on the extreme left fared worst of all. The wind failed and the gas affected British troops more than the Germans. A belt of mine craters made progress even more difficult, and the German front line was not secured.

Despite these checks, there was an opportunity to break through in the centre where the German second line was under threat. But the two reserve divisions were held too far back and French only released them to Haig at the end of the morning. They had already been marching for three nights and by the time they reached the battlefield the troops were exhausted. A confused jumble of units surrounded Le Rutoire Farm, an obvious target for German harassing fire. The attack was postponed until the following day and it was mid-morning before it began. By that time the Germans had rushed up reserves and the second line was strongly held. With great courage some elements reached the German second line but could not stay. The survivors of the two divisions drifted back in disorder and only the arrival of the Guards Division plugged the gap.

By 27 September 1915, German counter-attacks had re-captured the Quarries, Fosse 8 and the Dump in the north. The failure of the Guards Division in an attack on Hill 70 (near Loos) left the more dominating ground in German hands. Joffre's attacks in Artois had also failed. He agreed

A ruined street, Loos, 30 September, 1915. The famous 'Tower Bridge' can be seen in the distance. © IWM Q28987





Gas Alarm! Ready with respirators to repel an enemy attack under cover of the deadly cloud at Loos. © NAM

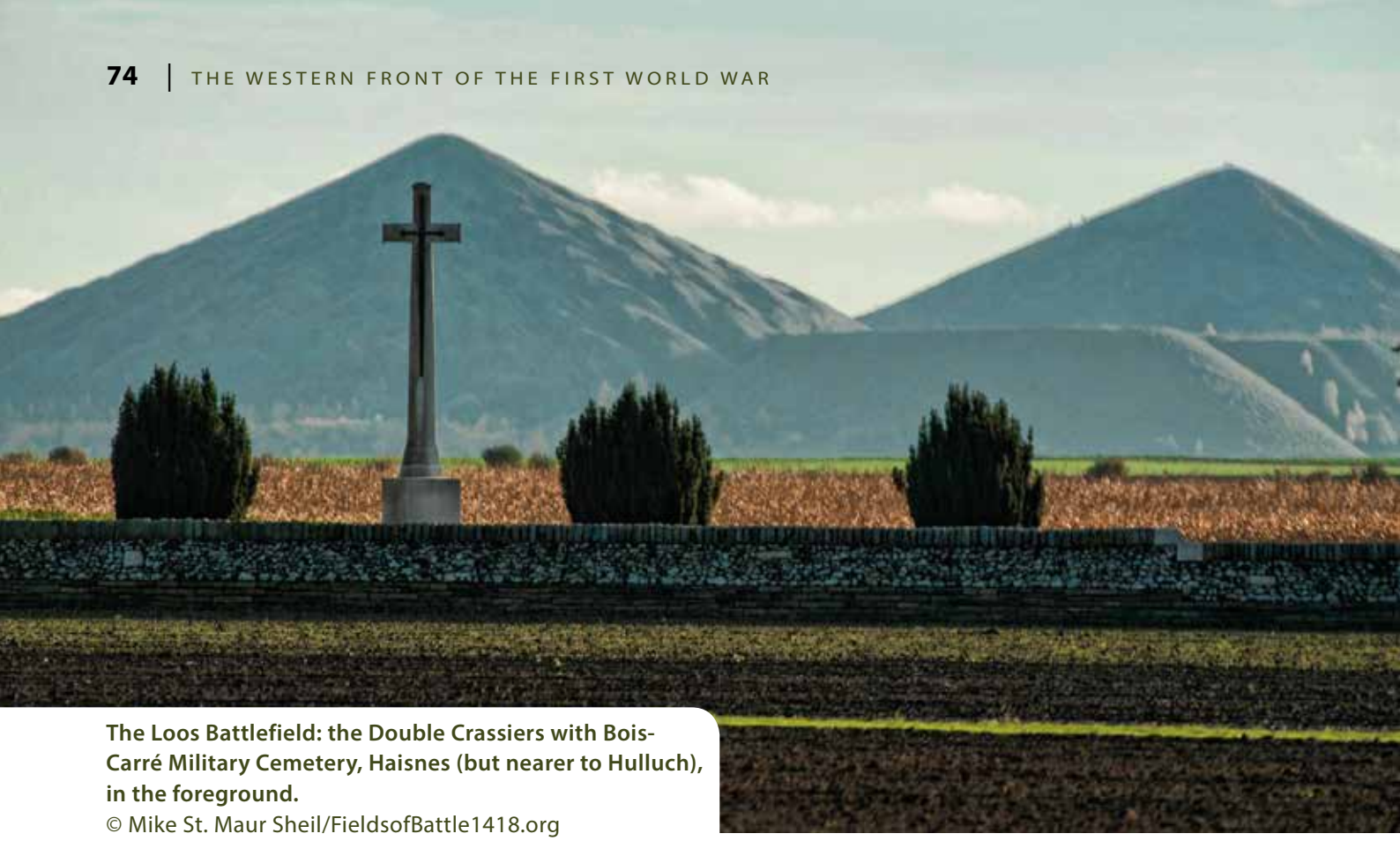
to pause and prepare a new offensive, which began on 6 October in Champagne. The French also attacked again in the north on 11 October. Two days later, the British, using the fresh 12th and 46th Divisions attacked the Dump, Fosse 8 and the Hohenzollern Redoubt. Only minor advances were made but sporadic fighting continued for some days before the battle closed.

Commentary

The Battle of Loos marks a significant change in the development of the British Expeditionary Force. The old regular army was no longer the predominating force: now the Territorial and New Army divisions played a full part. The new formations, which had been in France for some months and had some experience of the trenches, generally acquitted themselves well. It is hard to understand why the raw 21st and 24th Divisions were ever committed to the battle: their failure is not surprising. Otherwise the Battle of Loos reinforced the lessons of the earlier offensives of 1915.

The British Army was not yet an effective force. British industry could not produce the equipment, especially the artillery and ammunition, which the Army needed; but material deficiencies were not the most serious problems. Some British formations were well-trained: 47th Division, for example, had rehearsed its attack over similar ground which partly explains its success on the first day. But training standards were not uniform. The New Army divisions were still learning their trade, with very few professional soldiers to teach them. The shortage of trained general staff officers was most crucial and a number of failures in basic staff duties such as march organization and rationing had their impact.

British generalship, from French and Haig downwards, has also been heavily criticized. Almost all of the commanders were operating at a level far beyond their training and experience. They did not lack courage. Three divisional commanders were killed during the battle, largely because they were forced to command from the front



The Loos Battlefield: the Double Crassiers with Bois-Carré Military Cemetery, Haisnes (but nearer to Hulluch), in the foreground.
© Mike St. Maur Sheil/FieldsofBattle1418.org

for lack of effective communications.[2] They were usually trying to take decisions on the basis of inadequate and out-dated information; criticism of them should take account of the circumstances. However, the commander-in-chief could not escape censure. Field-Marshal Sir John French was recalled to the United Kingdom in December, being replaced by General Sir Douglas Haig.

The Battlefield Today

The Loos battlefield has not been seriously disturbed by modern development and a tour of the ground is the best way to understand the battle. The best places to view the battlefield are the Commonwealth War Grave Commission cemeteries. Dud Corner Cemetery in the south has an observation platform, which gives an excellent view of the whole area. It also contains the Loos Memorial to the Missing, commemorating over 20,000 soldiers who have no known grave (not all from the Battle of Loos). St Mary's Advance Dressing Station gives a good view of the centre of the battlefield and Quarry Cemetery is close to the Hohenzollern Redoubt's location. There are no major roads, except at Hill 70 and Dud Corner. It is possible to walk the battlefield on a number of tracks, covering most of the front line.

Michael Orr

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[2] The three commanders concerned were: Major General T. Capper (7th Division); Major General G. Thesiger (9th (Scottish) Division); Major General F. D. V. Wing (12th (Eastern) Division).

11. The Battle of Verdun
(21 February – 20 December 1916)

Description	French	German
Commanders-in-Chief	General Joseph Joffre	General Erich von Falkenhayn
Principal Forces Engaged	**French Second Army** (General Philippe Pétain, succeeded by General Robert Nivelle) II Corps: 29th & 67th Divisions XXX Corps: 72nd, 51st & 14th Divisions VII Corps: 132nd, 3rd & 4th Divisions Army Reserves: 37th, 48th & 16th Divisions General Reserve: I & XX Corps Ultimately, some 65 divisions rotated through the sector.	**German Fifth Army** (Crown Prince of Germany) VI Reserve, XVIII, III (Bavarian), XV, V Reserve & VI Reserve Corps 19 Divisions Ultimately, some 50 divisions rotated through the sector.
Context	An interruption in the Allied plans for a Franco-British offensive in the Somme. Verdun had been fortified extensively in the last quarter of the nineteenth century, but during the course of 1915 had been partially abandoned.	German attempt to drive France out of the war by forcing its army to fight at a material disadvantage for a prestige objective. This operation was to be followed by a general offensive against the BEF and weakened French forces.
Casualties	ca. 400,000	ca. 300,000
Consequences	French national resolve stiffened and the battle became a key symbol of patriotic sacrifice. Reduced French forces available for the combined offensive on the Somme, and pressure for this offensive to be undertaken as early as possible. Reputations of Pétain and Nivelle enhanced.	Falkenhayn's failure resulted in his replacement by Hindenburg at the end of August.

Introduction

By the end of 1915 the Central Powers had contained the threat posed by Russia, and defeated Serbia.[1] General von Falkenhayn's strategy was to use 1916 to defeat the Western allies. Specifically, he planned to engage and beat France at a place which the French would be forced to defend at a material disadvantage. It is not clear whether Falkenhayn's attritional strategy was intentional or rationalised in retrospect. The Verdun salient had been formed in 1914 as the French retained control of the fortified region during the initial German advance and subsequent attacks south in the St. Mihel area. The costly counter-attacks by the French against German gains in 1914 provided a rationale for the German concept of operations.

[1] The highly successful Brusilov offensive (4 June – 20 September 1916), which broke the back of the Austro-Hungarian army, demonstrated that Russian military potential was far from neutralised. It triggered the transfer of German forces to the Eastern Front, which reduced the German effort at Verdun, as did the Battle of the Somme.

The Battlefield

The Verdun battlefield is approximately 30 kilometres by 30 kilometres in area, with a frontage of 60 kilometres from Avocourt to Les Eparges. The Salient was bisected by the unfordable river Meuse. The east bank of the Meuse is dominated by the Meuse heights, an escarpment broken by ravines, at the time a mixture of farmland, vineyards and woods, and the site of the eastern half of two concentric rings of forts around the city of Verdun, which lies in the valley.

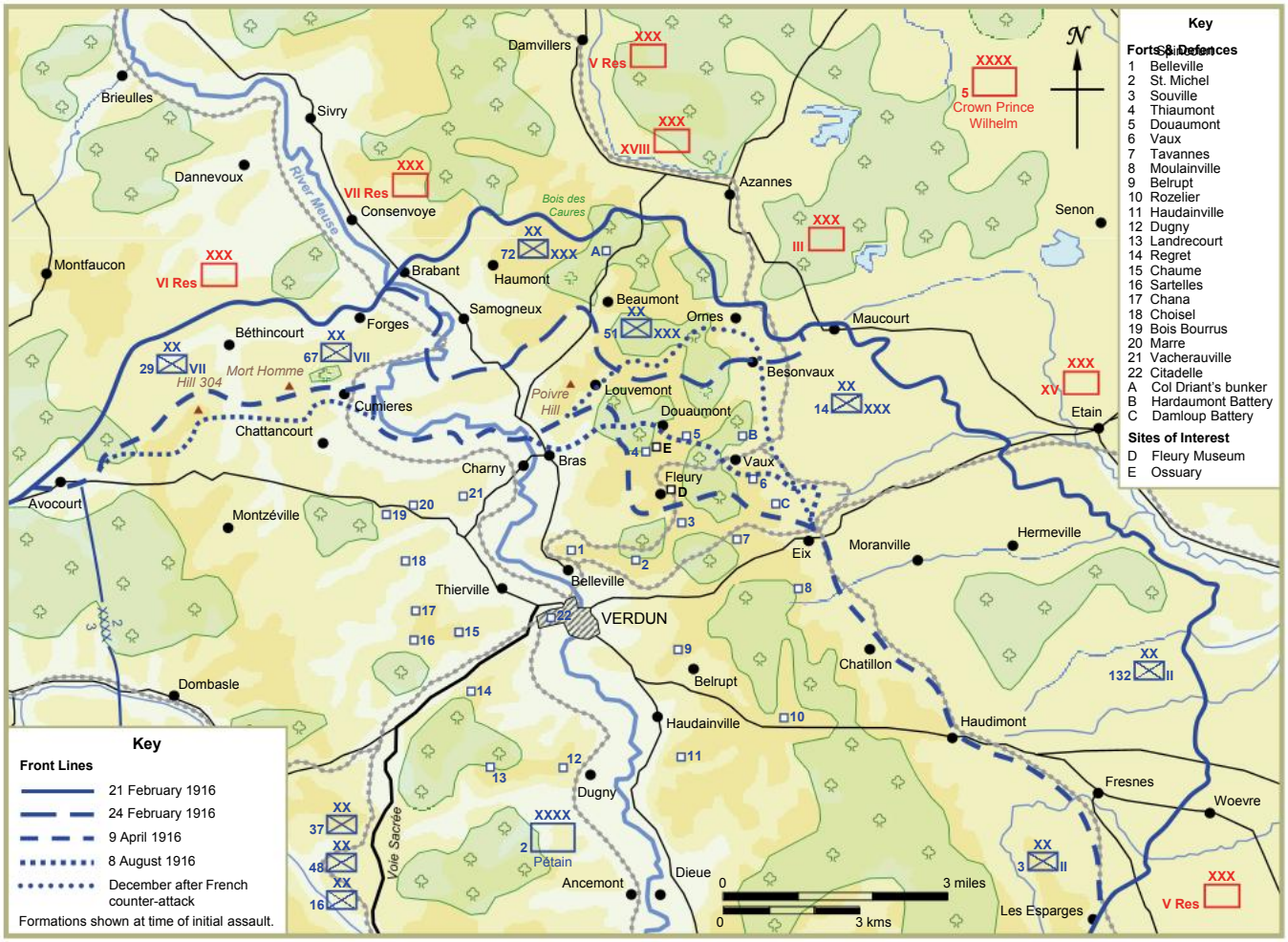
The main feature of the battlefield on the west bank was the ridge running east to west approximately 10 kilometres north of Verdun with its summits Point 304 and Le Mort Homme. The standard gauge railway lines to Verdun were cut by German shelling. The only supply route was the road running north from Bar-le Duc to Verdun, together with a narrow gauge railway line which ran parallel to it, which was to become famous as the Voie Sacrée.

Deployment

The French Second Army was responsible for the Fortified Region of Verdun. At the beginning of 1916 a mere three divisions defended Verdun and surrounding area. During the 1880s the French had constructed a belt of modern forts around Verdun, making use of modern materials such as reinforced concrete. After the Belgian forts fell in 1914 to heavy Germany siege artillery, the French concluded that concrete fortresses were of limited value and transferred troops and guns to the field armies. Alarm was raised by the local commanders, whose requests to strengthen the defences were ignored by Joffre, who sought to focus on the planned Franco-British offensive on the Somme. Lieutenant Colonel Émile Driant, whose two battalions of Chasseurs occupied the tip of the salient in the Bois des Caures, used his position as a French national deputy to complain directly to politicians and to General Joffre about the weakness of the defences at Verdun.

The Germans, extending the road and railway network, amassed a force of 19 divisions and 400 batteries of guns in a ring around the eastern half of the Salient, including an additional 2,000 pieces of artillery. The German tactics were to be based on massed accurate artillery fire directed in advance of the infantry, and to suppress artillery positions, with the infantry seeking to find and exploit weak spots in the defences. The plan called for one battery per 150 metres of front with one battery per 300 metres for neutralisation. A proportion of shells would contain phosgene, an improved and highly lethal choking agent against which French gas masks only provided partial protection. Targets in depth would be engaged by artillery registered by observation aircraft, and the attack supported by a fleet of 145 two-seat bomber reconnaissance aircraft and 25 fighters. The infantry itself would attack in small groups supported by flame-throwers and massed artillery fire. The objectives were limited to the Meuse heights to create an anvil on which the French army would be battered by the German artillery.

Colonel Driant's Command Post, Verdun.
© Barbara Taylor



Map 11.1 – The Battle of Verdun, 21 February – 20 December 1916

The German offensive (Operation JUDGEMENT) was due to be launched on 12 February 1916, but due to unfavourable weather the initial assault was postponed until the 21st of that month. During the intervening period the French became aware that a major attack on Verdun was imminent, and so reinforced the sector, bringing their strength up to ten divisions.

The Battle

There were three main phases during the eight months of the battle:

21 February – 4 March 1916: The Initial Assault on the East Bank. This attack was launched east of the Meuse at 0715 hours on 21 February with a nine-hour bombardment from Avocourt to les Eparges. The mass of fire was directed east of the Meuse and its objective was the destruction of front line trenches. During the night, patrols recconoitred the French second position and the process was repeated on the 22nd and the following days, leading to the fall of Fort Douaumont on the 24 February. The French responded vigorously. The French premier Briand countermanded Joffre's initial intention to abandon the east bank, and accepted the German challenge to fight for Verdun. Troops and heavy guns from the general reserves were committed. On 25 February General Philippe Pétain took command of French forces in the Verdun salient. His staff supplied the eventual 450,000 troops in the Salient using motor transport convoys from the rail head at Bar le Duc along the Voie Sacrée – the Sacred Way. The Germans were held to the east of the Meuse heights, suffering in particular from artillery fire from the west bank. By the end of February the Germans had not obtained the advantaged position that they had hoped would form their 'anvil'.

6 March – 1 August 1916: German Attacks on Both Banks. The German General staff ordered the attack to be extended to the west bank of the Meuse with the aim of seizing the Mort Homme Ridge and the Bois de Cumières. The Germans attacked on 6 March 1916 and almost reached the summit of Le Mort Homme. The main attack on the east bank

failed with heavy casualties. The Germans replaced their attacks on broad fronts with a series of attacks on narrow frontages – all punctuated by French counter attacks. On 30 April Pétain was promoted to command the Central Group of Armies and was replaced by Robert Nivelle, whose aggressive attitude found favour with Joffre. One of the last German gains was the capture of Fort Vaux on 7 June. After the start of the Allied Somme offensive on 1 July 1916, the attacking German Fifth Army was denied further resources, but made a last effort to capture the ridge at Souville on 11 July, before its offensive was terminated to preserve troops.

1 August – 17 December 1916: French Counter-Offensives. Between 1-17 September 1916, the French recaptured the ground around the now pulverised village of Fleury on the east bank. Between 20 October and 2 November the French recaptured Fort Vaux and Douaumont with an infantry assault following a six-day artillery bombardment of 855,264 shells. On 16-17 December a final assault by four divisions following an artillery barrage of 1.1 million shells advanced two kilometres, capturing 11,000 prisoners and 115 artillery pieces.

1917-18: Subsequent Operations. During 26-28 August 1917, a very carefully planned French limited attack after a nine-day artillery preparation recaptured ground on the Mort Homme and Point 304 features taking over 9000 prisoners, followed by further successful limited attacks in September. On 26 September 1918, the French Fourth Army and the United States First Army launched a major offensive on the West Bank.

Commentary

The battle of Verdun was the first major battle of attrition on the Western Front, and one of the largest. Relieving pressure on Verdun became a rationale for the Somme offensive, while French participation on the Somme demonstrated German failure at Verdun.

The battle became a symbolic trial of national will, vesting the obsolescent nineteenth century forts with more political significance than justified by their military value. Verdun became a symbol of defiance. The catch phrase "ils ne passeront pas" (they shall not pass), coined by Nivelle, has been adopted by popular movements from the Spanish Republicans to Russian "Pussy rioters".

The devastated battlefield was too contaminated to be recovered for agriculture and became military training areas or forest. This pragmatic attitude contrasts with the Anglo-Saxon attitude of battlefields as hallowed ground.

Fort Douaumont today, a symbol of reconciliation.
© Barbara Taylor

The Verdun Battlefield today. © Wikipedia.org

Verdun has been adopted by modern France as a symbol of reconciliation between France and Germany. Their flags fly over Fort Douamont, alongside that of the European Union.[2]

The Battlefield Today

The battlefield is extremely well preserved containing the remains of trenches and bunkers, with the actions of units marked by memorials. Walking trails allow the visitor to explore the area. The main places to visit are:

Fort Douaumont. A key point in the battle offering good observation of the surrounding area.

The Fleury Memorial. The major museum and interpretation centre.

On the west bank the heights of **Mort Homme** and **Côte 304** are accessible with paths allowing access to the trenches nearby.

Each of the **abandoned villages** of Beaumont, Bezonvaux, Cumières, Douaumont, Fleury devant Douaumont, Haumont, Louvemont, Ornes and Vaux is commemorated by a chapel.

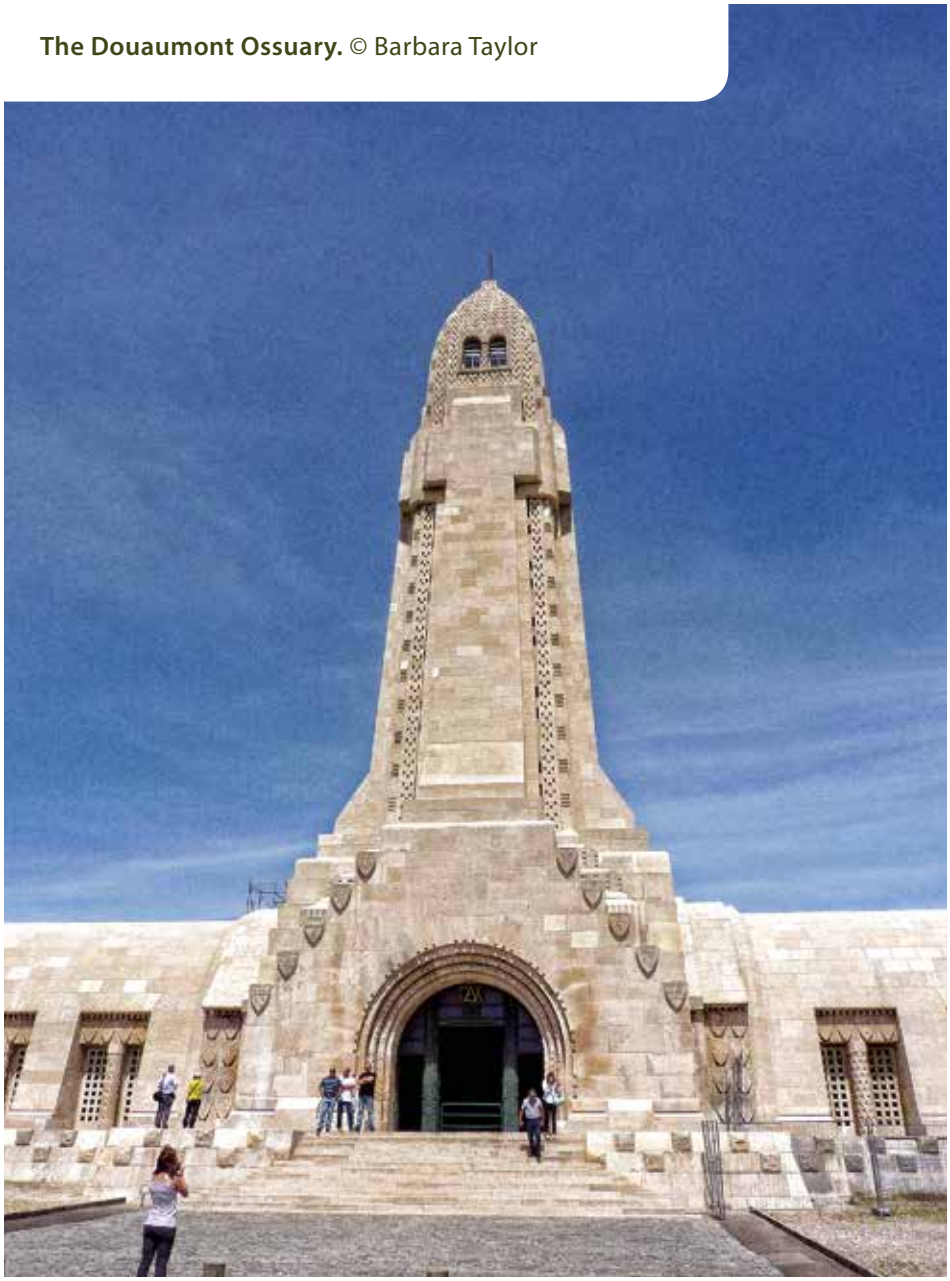
The French positions in the Bois de Caures including the bunker occupied by Colonel Driant.

The Douaumont Ossuary (overleaf) contains the bones of 130,000 French and German unidentified dead and the Douaumont National Cemetery contains 15,000 French dead.

Frank Baldwin

[2] Editor's Note. In a manner that many British people might find difficult to appreciate, the symbolism of images of the German Chancellor Konrad Adenauer and the French President Charles de Gaulle, and equally of Helmut Kohl and Francois Mitterrand, standing hand-in-hand at Verdun is profoundly important for the French-German partnership in forming the motor of an 'ever-closer' European Union.

The Douaumont Ossuary. © Barbara Taylor



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12. Battle of the Somme
(1 July – 18 November 1916)

Description	British	French	German
Commanders-in-Chief	General Sir Douglas Haig	Marshal Joseph Joffre General Ferdinand Foch	General Erich von Falkenhayn
Principal Force Commanders	General Sir Henry Rawlinson, Fourth Army General Sir Edmund Allenby, Third Army General Sir Hubert Gough, Reserve Army	General Émile Fayolle, Sixth Army General Alfred Micheler, Tenth Army	General der Infanterie Fritz von Below, Second Army Generalleutnant Hermann von Stein, XIV Reserve Corps
Principal Forces Engaged	Third Army Fourth Army Reserve Army	Sixth Army Tenth Army	Second Army
Casualties	419,654	202,567	583,000 [British Official History]
Consequences	The immense losses made Lloyd George (Prime Minister from 7 December 1916) very reluctant to provide fresh troops for further offensives. But the British army had learnt, albeit at great cost.	The French losses for comparatively small gains at the Somme undermined confidence in Joffre's generalship.	German losses forced their eventual withdrawal to the defences of the Hindenburg Line (the Siegfried Stellung) in the early spring of 1917.

Introduction

On 6-8 December 1915 the Allied war leaders met at Chantilly to plan their strategy for 1916. Joffre chaired this conference. According to his 'plan of action', Britain, Italy and Russia would 'intensify their efforts', doing everything they could to wear down the adversary, while France would 'collaborate in this attrition as much as its resources would permit'. It was decided that simultaneous offensives on the Eastern Front by the Russian Army, on the Italian Front, and on the Western Front by the Franco-British Armies, should be carried out to present a multiplicity of threats to the Central Powers and to deny the Germans time to transfer troops between fronts to meet localised threats. Joffre believed that these coordinated, concentric offensives would lead to the 'strategic rupture' of the enemy's defences in the West and 'the destruction of the German and Austrian armies'.[1]

The new Commander-in-Chief of the BEF, General Sir Douglas Haig, favoured a British offensive in Flanders, close to BEF supply routes, in order to drive the Germans from the Belgian Coast and to end the German submarine threat from Belgian ports.[2] Haig, though not formally subordinate to Joffre, normally coordinated operations with the French. In January 1916, Joffre had agreed to the BEF making its main effort in Flanders but in February 1916 the decision was changed to mounting a combined offensive on the Somme at the junction of the French and British armies before any British offensive in Flanders.[3] The choice of the Somme 'was driven primarily by Joffre's desire to shift the burden of the war to France's allies'[4], and by the existing deployment of British and French forces.

On 21 February 1916, the Germans began their major offensive against the French at Verdun. The battle there, and rapidly mounting casualty toll, forced the French army

[1] Based on Robert A. Doughty, *Pyrrhic Victory: French Strategy and Operations in the Great War* (Harvard: Belknap, 2005) p. 251.

[2] Peter Hart, *The Somme* (London: Cassell, 2006) p. 27.

[3] *Ibid.*, p. 37.

[4] Doughty, p. 258.

to commit divisions originally earmarked for the Somme offensive; this meant that the French contribution was reduced to eleven divisions instead of the original twenty-five.[5] The British army, meanwhile, was able to deploy twenty-five divisions – seventeen of which were 'New Army' volunteer divisions. In practice, however, several of the divisions had become 'mixed' with a combination of nominally 'old' regular and New Army brigades. Almost all the BEF divisions were sucked into the battle. By 31 May 1916 the ambitious Franco-British plan for a decisive victory in Picardy had been reduced to a limited offensive to relieve pressure on the French army at Verdun, and to intensify the attrition of German forces now that the Allied general offensive envisaged at Chantily was underway.[6] However, Haig still sought a breakthrough at the Somme that could be exploited using Gough's Reserve Army.[7]

Deployment

The German army had had the advantage of occupying the high ground and fortifying their positions from late 1914. Until the British arrived in October 1915, relieving French forces, it had been a relatively quiet sector of the Western Front. The German defences hinged around a series of nine heavily fortified villages: Serre, Beaumont Hamel, Thiepval, Pozières, La Boisselle, Ovilliers, Contalmaison, Fricourt and Mametz.[8] In addition, the Germans had constructed eleven heavily defended redoubts dominating the high ground overlooking the British positions. In three lines of defences, the Germans had built deep shelters in the chalk, some of which were as much as twelve metres underground. Hence many of the defenders could survive a heavy bombardment and then remerge with their machine-guns to man the damaged trenches of their firing lines. The Germans had reinforced their front line infantry with extra machine-gun companies. The German divisions deployed on the Somme initially were the 12th, 52nd and 10th Bavarian regular divisions, and the 2nd Guards, 26th and 28th Reserve Divisions. In addition, the 185th, 11th Reserve and the 12th Reserve Divisions were deployed on the afternoon of 1st July. So on that day, the date of the combined Allied attack, there were in total six German divisions defending with three others held in reserve. German artillery was well sited and generally superior to the Allied artillery, particularly the British.

The main responsibility for the Allied attack was given to the British Fourth Army commanded by Sir Henry Rawlinson and to the French Sixth Army under General Émile Fayolle. VII Corps – 46th (North Midland) and 56th (London) Divisions, with the 37th Division in reserve – of General Edmund Allenby's Third Army was tasked with conducting a diversionary attack to the north of Fourth Army at Gommecourt. The latter army's order of battle for the assault on 1 July (see Map 12.1), running north to south, was as follows:

Corps	Commander	Line of Departure	Composition (divisions)		
			Regular	Territorial Force	New Army
VIII	Lieutenant General Sir Aylmer Hunter-Weston	Opposite Serre and Beaumont Hamel	4th and 29th	48th (South Midland)	31st
X	Lieutenant General Sir Thomas Morland	Opposite Thiepval		49th (West Riding) in reserve	32nd and 36th (Ulster)
III	Lieutenant General Sir William Pulteney	South of Thiepval	8th		34th; 19th (Western) in reserve
XV	Lieutenant General Henry Horne	Opposite Fricourt and Mametz	7th		17th (Northern) and 21st
XIII	Lieutenant General Walter Congreve VC	Opposite Montauban			18th (Eastern) and 30th; 9th (Scottish) in reserve
Totals			4	2	10

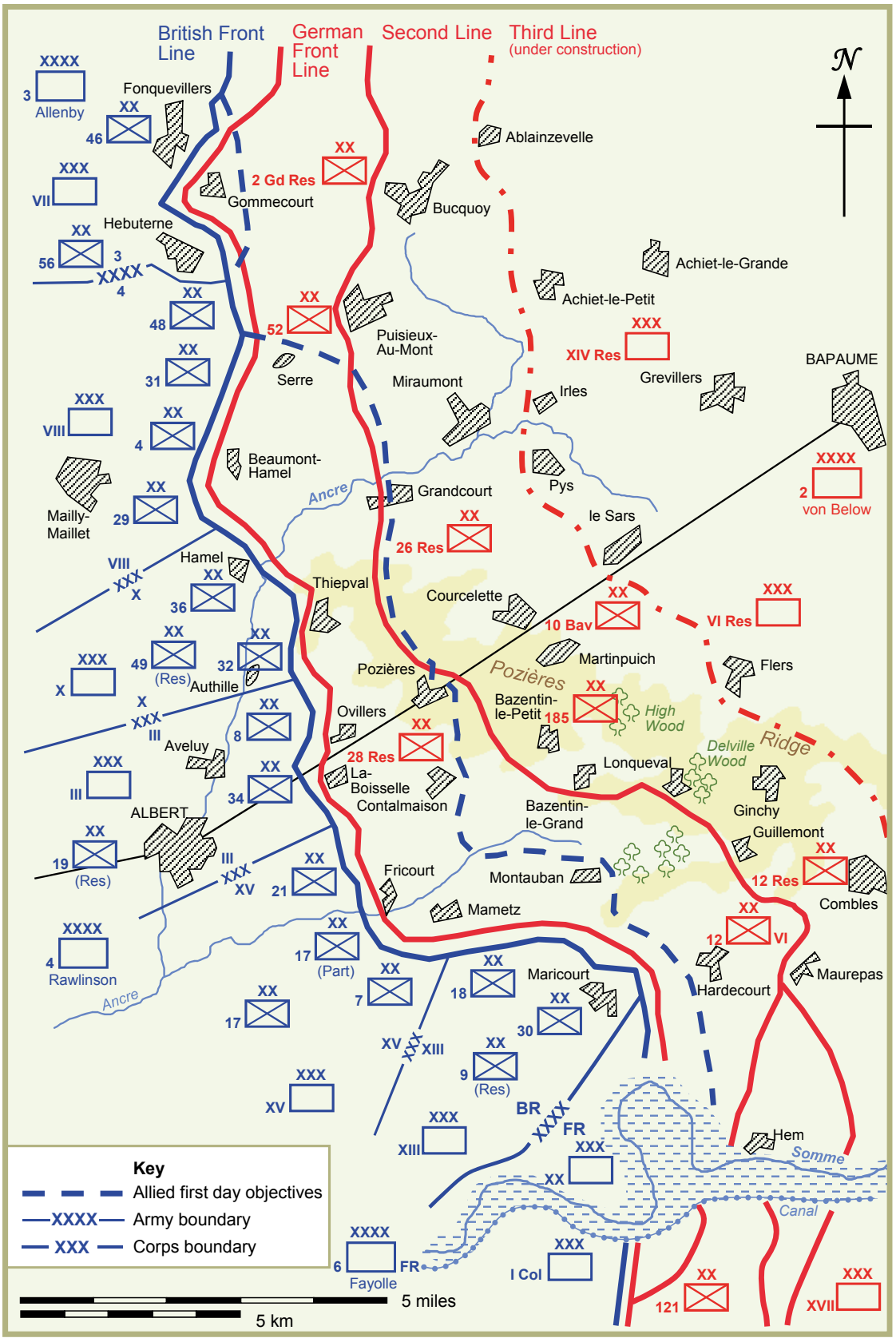
[5] If army group and GHQ reserve divisions are included, however, the French total was eighteen divisions.

[6] William Philpott, *Bloody Victory: The Sacrifice on the Somme and the Making of the Twentieth Century* (London: Little, Brown, 2009) pp. 81-86.

[7] Andrew Robertshaw, *Somme, 1 July 1916: Tragedy and Triumph* (Oxford: Osprey, 2006) p. 18.

[8] Strictly speaking, Pozières and Contalmaison were in the intermediate line of the German defence.

In addition, a GHQ reserve of two infantry divisions (the 38th (Welsh) and the 23rd) and three cavalry divisions was created to exploit any breakthrough. British artillery support for the attack consisted of 1000 field guns, 182 heavy guns and 245 heavy howitzers firing one and a half million rounds during the preliminary bombardment in the week before the battle.



Map 12.1 – The Battle of the Somme: Initial Dispositions, 1 July 1916

The French Sixth Army was deployed astride the Somme River from north to south as follows:

- XX Corps (General Maurice Balfourier).
- I Colonial Corps (General Pierre Berdoulat).
- XXV Corps (General Charles Jacquot).

In reserve stood II Corps (General Denis Auguste Duchêne).

The Battle

Retrospectively, it is best to describe the battle as seven different phases, although the battle was not planned or executed in this way.

Phase 1: 1 July 1916. At 0728 hours[9] seventeen mines were blown beneath the German front line, followed at 0730 hours by all five British corps of Fourth Army and the French XX corps of Sixth Army attacking towards objectives, which were generally on the German second line. In addition, VII Corps of Allenby's Third Army, launched its diversionary attack against Gommecourt in the north.

The artillery bombardment that had commenced on 24 June had been extended because the offensive had been postponed until 1 July due to bad weather. This had also limited the ability to monitor the effectiveness of the bombardment. The Germans who had been sheltering in deep, well prepared dugouts were able to set up their machine guns and together with accurate artillery fire inflicted huge casualties on the slowly advancing soldiers, who were not helped by the failure of the barrage to cut the German wire in places.

The day saw mixed results. North of the Albert-Bapaume road, the attacks by VIII, X and III Corps had failed disastrously with the exception of the 36th Ulster Division, which had managed to capture the Schwaben Redoubt west of Thiepval. However, the Ulstermen had found it necessary to withdraw in the face of German counter-attacks and because the flanking divisions were not as successful.

In the south, however, there was limited success. Between La Boiselle and Fricourt there was some penetration; XV Corps took Mametz village. XIII corps, attacking alongside the French XX Corps, took all their main objectives from Pommiers Redoubt east of Mametz, to just short of the Dublin Redoubt north of Maricourt. Overall, Rawlinson had planned for thirteen fortified villages to be captured on the first day. In the event only two, Mametz and Montauban, were taken.

The French astride the Somme were very successful achieving all of their objectives with comparatively light losses. Here the artillery bombardment had proved more effective. Unfortunately the success of XIII Corps and that of the French (their operation had been conceived as a supporting, flank covering attack) was not immediately exploited giving the Germans the opportunity to reinforce their defences in this and other threatened sectors.

On 2 July, Haig directed General Gough to assume command of VIII and X Corps in the nothern part of the British battlefield.

Phase 2: 3 July. Shortages of artillery ammunition together with the number of casualties suffered on 1 July meant that no general resumption of the offensive was possible north of the Somme. Two separate attacks in the north and the south were undertaken. There was a failure to capture Thiepval, but Fricourt was occupied, having been abandoned by the Germans overnight.

Phase 3: 4-14 July. Before the German defence consolidated, the Allied armies had a chance to make gains. Hastily fortified woods and villages – Bernafay, Trones and Mametz Woods, and Contalmaision – held up the British in front of the second line. South of the Somme, the I Colonial Corps occupied the high ground of the Flaucourt plateau. On 14 July, Rawlinson planned an ambitious attack on the German second line with some new innovations. The objectives were to be: on the left, the woods of Bazentin Le Petit; on the right, Delville Wood, and further on, High Wood. The innovations were: a night approach march up Caterpillar Valley to the line of departure. Secondly, after only a one minute intense barrage, the attack was launched at 0325 hours with the advance being accompanied by a creeping barrage. On the left, 7th and 21st Divisions of XV Corps attacked, and on the right 3rd and 9th divisions of XIII Corps. The result was dramatic: 5 miles (8 kilometres) of the German second line was overrun and Bazentin Le Petit Wood was captured. On the right there began a long and bloody fight to capture Delville Wood. In the centre, 7th Division was able to advance with success up to the edge of High Wood. Here was a chance for the cavalry to exploit the gains: poor communications, however, meant that the main body of the cavalry deployed south of Albert knew nothing of the opportunity that had just opened.

[9] With the exception of the mine exploded at Hawthorn Crater, which was blown at 0720 hours. In consequence the German defenders reached it before the British attackers. The mine explosion was captured on film.

Phase 4: 15 July – 2 September. There was further consolidation in preparation for the next major attack. In order for this to take place it was necessary to clear the Germans from Delville Wood, a task that was entrusted to the South African Brigade of 9th (Scottish) Division which attacked at 0615 hours on 15 July. Although the majority of the wood was captured, the Germans remained in control of the northwest corner. Realising the importance of the wood, the Germans reacted energetically with heavy shelling and determined counter attacks. On 18 July heavy rain and effective German assaults forced a limited withdrawal. On 20 July the South Africans were relieved by 2nd Division, which continued the attack.[10] However, not much progress was made and fighting continued here throughout August. On 29 August, 14th Division succeeded in almost clearing Delville Wood, but it was not until 9 September that the feature was finally captured. Fourth Army's right flank was contained by the heavily defended villages of Guillemont and Ginchy.

On 23 July an attack on Pozières Ridge was launched. This was an important objective as it was part of the dominating high ground around the heavily defended villages of Thiepval and Pozières. The assault was entrusted to I ANZAC Corps, which was part of General Gough's Reserve Army assisted on the left by the British 1st Division and on the right by the 48th Division. The attack began at 0030 hours on 23 July preceded by an intense bombardment.[11] The Australians captured their initial objectives quickly but encountered very heavy German shellfire and counter attacks. The 1st Australian Division held on and was relieved in place by 2nd Australian Division on 27 July. Repeated attacks were made to capture the windmill feature and the German second line on the crest of the ridge, which after a series of further attacks were finally captured on 5 August.

General Gough's forces were now able to attempt to make further gains along the ridge towards Thiepval. These attacks were very costly due to heavy German resistance and shellfire particularly around Mouquet Farm, which was captured several times but not held. On 4 September the Canadians relieved the exhausted Australians. Mouquet Farm, however, was not captured until 27 September following the fall of Thiepval.

During this period the French Sixth Army had advanced steadily to Maurepas in anticipation of renewing the battle in strength in September.

Phase 5: 3-17 September. In early September the offensive was restarted with fresh forces in the French sector. Tenth Army joined the battle south of the Somme on 4 September while Sixth Army advanced north of the river, momentarily breaking through the German third position at Bouchavesnes on 12 September, a major achievement. Unfortunately, the French pressure could not be properly coordinated with British operations. Meanwhile, Haig and Rawlinson had planned a new offensive in an attempt to achieve a decisive breakthrough by Fourth Army. On 15 September, eleven divisions would attack over a frontage of 12,000 yards (eleven kilometres) in front of Courcellette to the north and Morval to the south. This offensive is significant for the first use of tanks: some 34 were deployed with limited success largely due to their technical unreliability.[12] Some progress, however, was made: Martinpuich and Flers were both captured and 47th Division finally cleared High Wood. Heavy German resistance and heavy rain halted the attack.

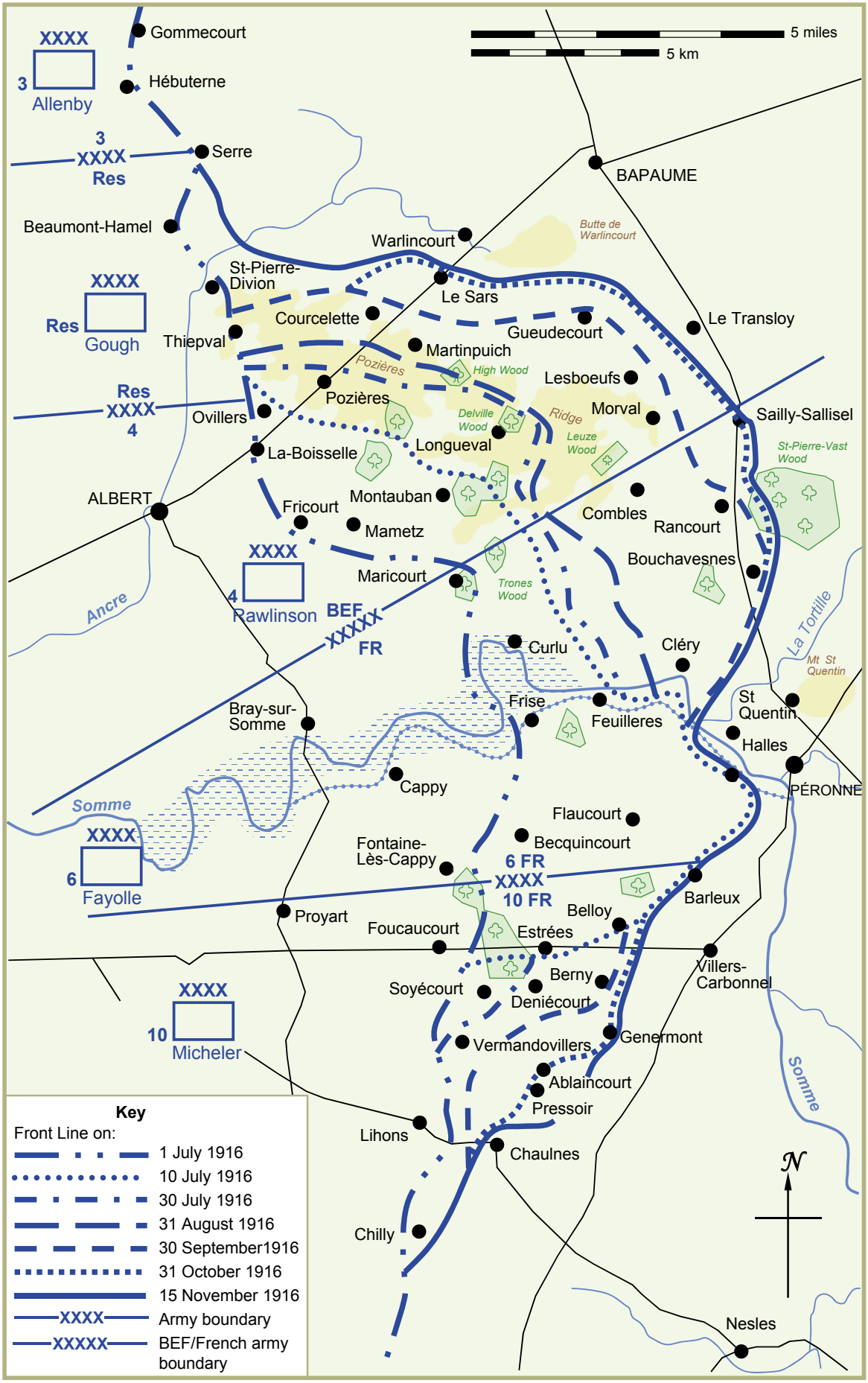
Phase 6: 25-30 September. There were two large-scale attacks in this period. In the south, Fourth Army and the French Sixth Army made good progress, reaching Gueudecourt only five kilometres from Bapaume. In the north, General Gough's Reserve Army attacked Thiepval on 26 September with II Corps and the Canadian Corps. Four divisions attacked on a frontage of 6000 yards (5.5 kilometres) between Courcelette and the German trenches south of Thiepval. On the right, two Canadian divisions achieved their objectives to the north of Courcelette. On their left flank, 11th Division overran the remains of Mouquet Farm but heavy casualties and tenacious German resistance slowed further advances. In the meantime, 18th Division made solid early progress but this formation's advance was halted by heavy machine gun fire around the remains of the Chateau. This resistance was only overcome by the intervention of a tank. Thiepval was finally cleared the following morning (27 September), but the weather was now deteriorating badly. The Battle of Thiepval Ridge continued to 30 September. The Schaben Redoubt, however was not finally cleared until early October.

Phase 7: 12 October – 18 November. With the British army finally in possession of Thiepval, General Gough needed to secure the whole of Thiepval Ridge in order that Haig's autumn offensive could start. This objective was finally achieved in a series of attacks by Reserve Army and Dominion divisions in appalling weather. The final German position at Regina Trench fell to the Canadians on

[10] Only 750 of the 3153 officers and men that entered Delville Wood mustered when the South African Brigade was finally relieved on 20 July.

[11] Charles Bean, *Official History of Australia in the War of 1914-1918,* Vol 3, *The Australian Imperial Force in France 1916,* p. 494.

[12] For more details, see Chapter 33 to this Guide.



Map 12.2 – The Battle of the Somme: Front Lines, 1 July – 15 November 1916

Lorry transport on the Somme, September 1916.
© NAM

10 November. This success enabled the main offensive to begin on 13 November.

Gough's offensive was designed to eliminate the German salient between the Albert-Bapaume road and Serre including Beaumont Hamel and Beaucourt. The attack commenced at 0545 hours in thick fog. Although supported by an intense barrage the attacking forces had to contend with thick mud and unexpectedly heavy German resistance. Beaumont Hamel was captured by 51st Highland Division and Beaucourt by 63rd Royal Naval Division. However, only small gains were made in other areas. On 18 November, the winter rains began, forcing Haig to bring an end to the Somme offensive. On the British Fourth and French Sixth fronts the battle had by now subsided into a series of localised fights for fortified villages.

Commentary

In 1916, most of the British army was inexperienced due to its rapid expansion following the call to arms by Lord Kitchener, the Secretary of State for War, at the start of the war. The Somme was the blooding of much of the volunteer New Army. On 1 July 1916, the British army suffered its largest number of casualties in its history – 57,470, of whom 19,240 were killed. The BEF had largely relied on the destruction of the German defences by artillery barrages to compensate for the inexperience and poor training of the New Army divisions. The problem, however, was that the bombardment in most places was far from sufficiently intense and often ineffective. In consequence, the attacking infantry was left very exposed to German machine-gun and artillery fire.

When offensive operations were called off in November the Allied armies had failed to reach Bapaume and had, on average, only advanced 10 kilometres (6 miles). However, the Germans had been forced to end their offensive at Verdun in order to be able to reinforce the Somme sector. By the end of the battle, the Germans had been so weakened that they considered that they would be unable to withstand a further major Allied offensive in the Somme area. Therefore in March 1917 they withdrew behind the newly prepared defences of the Hindenburg Line.

Despite the unacceptably high casualties, the BEF gained valuable experience, which would be demonstrated in 1917 and 1918. Infantry tactics were improved making wider use of automatic weapons such as the Lewis Gun, trench mortars and grenades enabling fire and movement. The artillery's performance improved, as did the quality of the shells and fuses supplied to it. Above all, cooperation and coordination between the artillery, aircraft, infantry and other arms was improved and as a result the BEF became a war winning army of integrated 'combined arms' by the summer of 1918, with the newly founded Royal Air Force providing both direct and indirect support. Unfortunately, despite the hard-learnt tactical lessons of the Somme being applied in 1917, the costly battles of attrition at Arras and Third Ypres suggested that operational and strategic ambitions remained unrealistic. Limitations in British and French command (and difficulties in weather) could not necessarily be compensated by improvements in tactics and technology.[13] Furthermore, the German army would also innovate and adapt, and so improve its effectiveness in both defensive and offensive operations.

[13] Editor's Note. A point made by Robin Prior and Trevor Wilson, *Passchendaele: The Untold Story* (2nd ed.) (New Haven and London: Yale Nota Bene, 2002) p. xiii: '…by 1917 the British army had sufficient materiel and expertise to conduct appropriate offensive operations on the Western Front, both employing the weaponry then available and profiting from the painful lessons learned in earlier operations. [However, the British] leadership – both political and military (if for different reasons) – failed to capitalize on these attributes.'

The Battlefield Today

Today nearly 100 years after the battle, the rolling chalk hills of Picardy have returned to farmland; the villages were rebuilt and are now larger than in 1916. The two main towns on the battlefield are Bapaume, where the German headquarters was sited, and Albert behind the British front line. The whole area is dotted with the memorials and cemeteries commemorating the fallen and those who fought there. The battlefield is dominated by the Memorial to the Missing of the Somme, built on the site of the Thiepval Chateau commemorating the 73,000 British and South African missing, as well as the British-French cooperation honoured in the only shared cemetery in France. The Australians are commemorated at Villers-Bretonneux, the New Zealanders at Longueval, and the Canadians at Vimy.

Other memorials include the Sheffield Memorial Park at Serre, which commemorates the volunteer 'Pals battalions' from Yorkshire and Lancashire such as the Accrington Pals. The Newfoundland Park at Beaumont Hamel is an area of the battlefield made famous by the sacrifice of the Newfoundland Regiment, part of the 29th Division which attacked this sector. The division's small, often over-looked, memorial stands at the entrance of the park. The Newfoundlanders' action is commemorated in a huge Caribou statue and a memorial to the missing at its base. Also in the park is a fine statue of a Highland Soldier, commemorating the 51st Highland Division, which captured this area in November 1916. Near Thiepval stands the Ulster Tower, a memorial to the 36th Ulster Division, which is a copy of Helens Tower that lies in the grounds of the Clandeboyne Estate near Bangor, Northern Ireland, where many of the men in the Division had trained. The 38th (Welsh) Division is commemorated at Mametz Wood. Delville Wood, near Longueval, is the site of the most impressive national South African memorial and museum.

John Ross

8-inch howitzers of 135th Siege Battery at La Houssoye, 1916. © NAM

Further Reading

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13. The Battle of Arras

(9 April – 16 May 1917)

Description	British Empire	German
Commanders-in-Chief	Field-Marshal Sir Douglas Haig General Sir Edmund Allenby General Sir Henry Horne General Sir Hubert Gough	General Erich Ludendorff General Ludwig von Falkenhausen General Georg von der Marwitz
Principal Forces Engaged	**British Expeditionary Force** First (Horne), Third (Allenby) and Fifth (Gough) Armies. I (Holland), XVII (Ferguson), VI (Haldane), VII (Snow) and V Corps (Fanshawe); Canadian Corps (Byng); I Australian & New Zealand Army Corps (Birdwood). Fourteen divisions in the initial assault. In Third Army reserve: Cavalry Corps (Kavanagh) and XVIII Corps (Maxse).	**German Army** Second (Marwitz) and Sixth (Falkenhausen) Armies. In Sixth Army (IX Reserve and I Bavarian Reserve Corps) six (plus elements of a seventh) divisions defending in line. Majority of divisions held in reserve to reinforce or counter-attack. Thirty-two divisions engaged during the battle.
Context	Offensive to divert Germans from major French offensive on the Aisne. Objective was to take the high ground north of Arras and to advance on Cambrai to the southeast.	Defensive battle. First big test of new tactics, which were incorrectly implemented in some sectors.
Casualties	158,660	150,000?
Consequences	Spectacular early successes, achieved through careful preparation, were followed by costly operations and limited further advances. Offensive assisted to some extent the French on the Aisne. The capture of Vimy Ridge became the defining moment for Canada in the war.	The German army was shaken by the assault but recovered. It inflicted heavy losses and limited further advances by the BEF. It was diverted from the Aisne battle to some extent. Defensive tactics were revised after the battle.

Introduction

On 9 April 1917 the BEF mounted an offensive near the city of Arras, Northern France. It was a preliminary part of an ambitious plan developed by the French commander-in-chief Nivelle, which was to launch a massive blow aimed at breaking through the German defences and so ending the war.[1] At Arras, the objective was to divert German attention and forces away from the Aisne by taking the high ground that dominated the plain of Douai and by advancing on Cambrai, thirty-five kilometres to the south-east.

In the initial assault, after a very heavy bombardment, Canadian divisions quickly captured Vimy Ridge in the north while British divisions in the centre made major gains in the valley of the river Scarpe, which bisected the battlefield. Subsequently, in the south, British and Australian divisions were frustrated in their attacks and made only minimal gains. Following the initial successes, the BEF mounted a series of smaller operations to consolidate the newly won positions and to maintain pressure on the Germans. Although these operations

[1] Described in this Guide under the Second Battle of the Aisne at Chapter 14.

were successful in their aims, their cost was heavy. The offensive was terminated on 16 May 1917.

New technology and new techniques were employed, particularly in the initial attack, which demonstrated that set-piece assaults against heavily fortified positions could be successful. Despite its disappointing later stages, Arras was the most successful British offensive launched on the Western Front to that date.

Planning and Preparations

Elements of three armies of the BEF were deployed on the Arras front of twenty-three kilometres. In the north was First Army (Horne); in the centre, Third Army (Allenby); and in the south, Fifth Army (Gough). Although the overall commander was Haig, Allenby had designed the battle plan. The assault force comprised fourteen divisions (including four Canadian and three Scottish) plus two to follow up, supported by 2,817 guns, 48 Mark I tanks and about 450 aircraft. Unusually, the three Scottish divisions were located near each other for the attack along the Scarpe: 15th Scottish (VI Corps); 9th Scottish and 51st Highland (XVII Corps).

Opposing the BEF were the German Sixth Army (von Falkenhausen) – IX Reserve and I Bavarian Reserve Corps – in the north and centre, and Second Army (von der Marwitz) in the south. Only six divisions (plus elements of a seventh) of Sixth Army were in the line, with the majority held in reserve to reinforce or counter-attack, supported by 1,014 guns. The staff of Ludendorff, operations chief of the High Command, had developed tactics to counter the new Allied methods that had been used at the Somme and Verdun. The German deployment was based on a new flexible tactical doctrine, the 'Principles of Command in the Defensive Battle in Position Warfare' (1 December 1916), implemented in early 1917.[2] Instead of fighting the main defensive battle well forward, it was envisaged that the principal action should take place in depth behind a lightly held front line, out of view and out of range of the enemy's field artillery. Abandoning the maxim that 'ground must be held at all costs', this innovative approach of 'elastic defence' rested on forcing an exhausted attacker to expend himself while the defender conserved and applied his strength on ground of his choosing. Critical to the success of this concept was the timely employment of powerful local reserves under unified command.

The Allied attack plan also drew on the lessons of the Somme and Verdun battles. A long and heavy artillery bombardment was concentrated on the toughest objective – Vimy Ridge. During the assault, the troops advanced in open formation based on new organisation and training.[3] Two divisions were ready to leapfrog the assault divisions to exploit and allow them time to consolidate and regroup. Before the attack was launched, a great deal of preparation was undertaken, much of it innovative.

The Arras region is chalk downland and easily excavated. Under the city is a network of caverns and cellars. The Royal Engineers' Tunnelling Companies expanded this network, constructing 12.4 miles of tunnels. In total, 24,500 men were concealed and enabled to arrive on the battlefield in secrecy and in safety.

Although the RFC had inferior aircraft to the Germans, this did not deter it from following an offensive strategy with constant combat patrols. Achieving and maintaining local air superiority was essential for reconnaissance, ground support, artillery spotting, photography and bombing tasks. With the arrival of von Richthofen's (the 'Red Baron') 'Flying Circus', RFC losses escalated to 316 planes for the month, which became known as 'Bloody April'.[4]

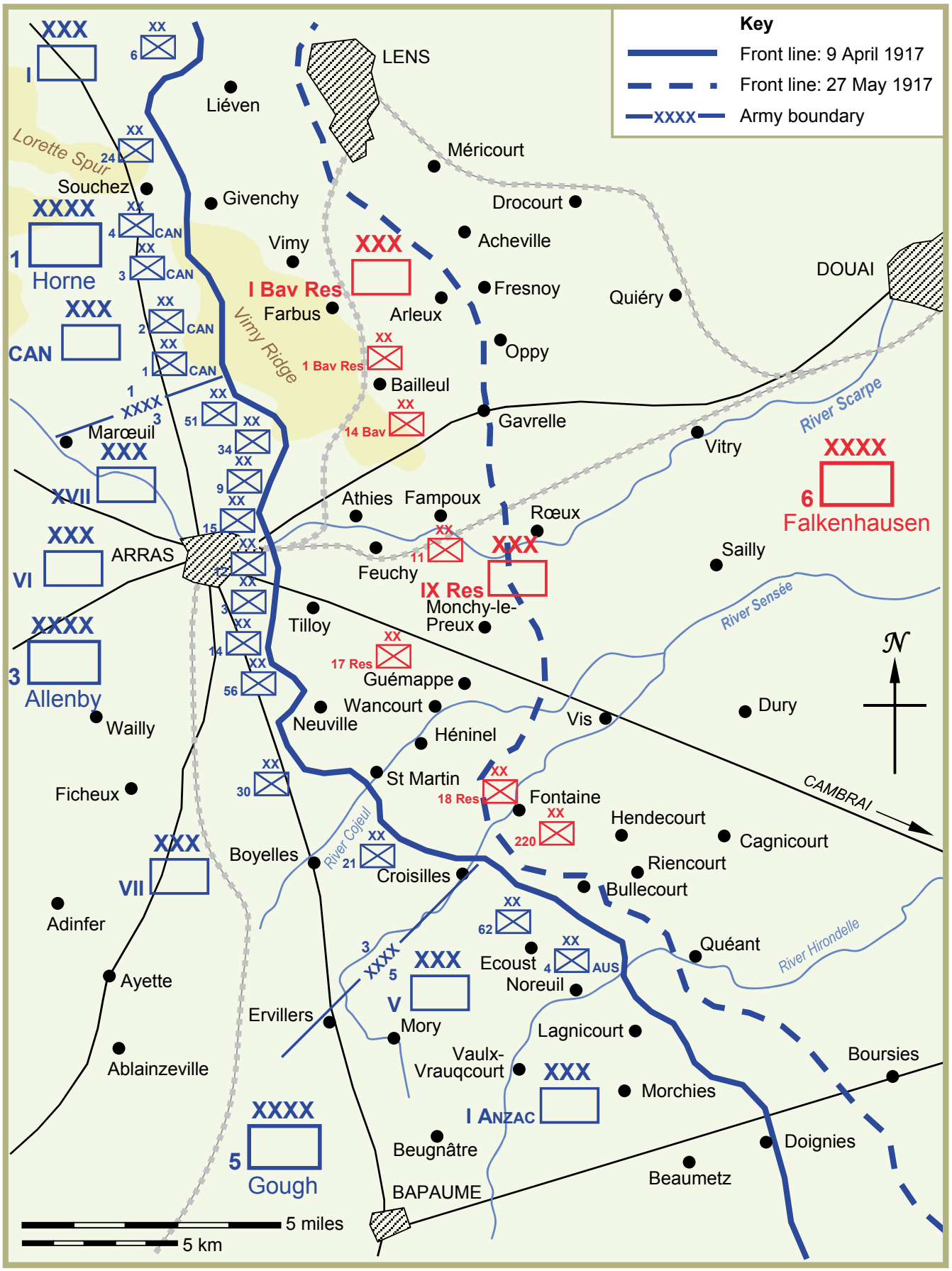
To counter enemy machine-gunners during the assault, a 'creeping barrage' was employed. This technique required the artillery to lay down a moving screen of shellfire that advanced across the battlefield just in front of the assaulting troops. The Allies had developed this method during the Somme battles of 1916 and it did much to protect the assaulting troops by keeping the Germans' heads down. The use of newly developed '106' graze fuses (that helped the cutting of wire) and gas-projectors added to the effectiveness of the barrage.

Apart from hostile machine-gun fire, a major danger to assaulting troops was enemy artillery. This threat was compounded by the fact that German batteries were hidden behind high ground on reverse slopes. Specialist units of the BEF located enemy guns by means of new 'flash spotting' and 'sound ranging' techniques. From 20 March systematic counter-battery fire was brought to bear on the German guns and by 9 April 1917 over 80% of German heavy guns around Arras had been neutralised.

[2] See Timothy T. Lupfer, *The Dynamics of Doctrine: The Changes in German Tactical Doctrine during the First World War,* Leavenworth Papers, no. 4, U.S. Army Command and Staff College, July 1981, pp. 11-21.

[3] Following the new training manuals SS 135, *Instructions for the Training of Divisions for Offensive Action* (December 1916) and SS 143, *Instructions for the Training of Platoons for Offensive Action, 1917* (14 February 1917). As Paddy Griffith has emphasized, the latter drove 'the epoch-making change from 'wave' tactics to small unit platoon initiatives relying on integral firepower'. See Paddy Griffith, *Battle Tactics of the Western Front: The British Army's Art of Attack 1916-18* (New Haven & London: Yale University Press, 1994) pp. 77-79 & 264.

[4] See Chapter 31, the Development of Air Power, 1914-1918.



Map 13.1 – The Battle of Arras, 9 April – 16 May 1917

The Battle

The bombardment of Vimy Ridge started on 20 March and on the rest of the front on 4 April 1917. The volume of artillery preparation dwarfed that of earlier offensives with 2,689,000 shells being fired. Casualties were not heavy but the defenders were exhausted and demoralised. By the eve of battle, the German frontline trenches had been destroyed. Although the British offensive had originally been planned for the morning of 8 April, it was postponed 24 hours at the request of Nivelle. The attack was immediately preceded by a surprise hurricane bombardment lasting five minutes, following a relatively quiet night. When the time came for the infantry to assault, it was snowing heavily with wind blowing the snow into the faces of the defenders. The combination of the short bombardment and the bad weather meant many Germans were caught unawares and taken prisoner.

In the north, in the most carefully crafted part of the entire operation, the Canadian Corps assaulted Vimy Ridge and won a famous victory. Emerging from twelve excavated 'subways', advancing behind a creeping barrage and making extensive use of Lewis light machine-guns, the Corps penetrated the 4,000 yard (3.66 kilometres) deep defences, took many prisoners and captured the crest of the ridge by 1300 hours. The success of this attack was due in no small part to meticulous planning, intensive training and the assignment of specific objectives to each unit. By giving units clear goals, troops could continue the attack even if their officers were killed or when communications broke down, thus overcoming two of the major problems of combat on the Western Front.

The major British assault on 9 April was in the valley of the Scarpe, with XVII Corps attacking along the north bank and VI the south. Leapfrogging 9th (Scottish) Division, 4th Division captured Fampoux after an advance of 5.6 kilometres, the greatest British success since trench warfare had set in. 12th Division attacked towards Feuchy while 3rd Division attacked towards Tilloy. The ultimate aim of these assaults was the capture of the German defence line between Wancourt and Feuchy. Most objectives had been achieved by the evening of 10 April though the Germans still held Neuville. One reason for the exceptional initial success of the offensive in the centre was the failure of von Falkenhausen to implement properly the concept of elastic defence by keeping his reserves too far back to be effective.

In the south, 62nd Division and 4th Australian Division of I ANZAC Corps attacked either side of Bullecourt. The operation was planned for 10 April but was postponed for 24 hours. The order to delay did not reach all units in time and the West Yorkshires (62nd Division) in particular suffered heavy losses in a premature assault. Despite protests from the Australians, the assault was remounted on 11 April. Breakdowns meant that only eleven tanks were available for support. The abortive attack of the previous day had forewarned the defenders. Optimistic reports about the gains made by the Australians deprived them of artillery support. Though they entered the German trenches many were captured and the survivors forced to withdraw. Their experience at Bullecourt imbued the Australians with a mistrust of tanks, which would last for over a year.

Gunners of the Machine Gun Corps (MGC) fire their gun at a German aircraft (not pictured) during the Battle of Arras. © IWM Q5172

British 18-pdrs under German fire close to Monchy-le-Preux. In the foreground is a RAMC advanced dressing station, 24 April 1917. © IWM Q6292

The battle turned on 11 April 1917 when the German reserves had finally come up. Ludendorff replaced Falkenhausen's chief of staff with Fritz von Lossberg (the 'Lion of Defence'), who had made a name for himself at Verdun and the Somme. A specialist in his field, he swiftly reorganised the German defences. This critical development was unknown to Allenby because the bad weather had prevented aerial reconnaissance. Believing that the Germans were on the run, he spurred his forces on and committed his cavalry, which suffered heavily attacking the hilltop Monchy-le-Preux. 56th Division at last captured Neuville, while 37th Division leapfrogged through, finally capturing Monchy-le-Preux.

The BEF had taken 13,000 prisoners and 200 guns with little loss on the first day but after another two days of battle had suffered 32,000 casualties. It was now exhausted and the offensive was halted on 14 April. After a pause, the BEF resumed the fight. It did so not only to consolidate its gains. The Nivelle Offensive (launched on 16 April) had miscarried badly: consequently, Haig was obliged to maintain the pressure on the Germans in order to aid the French.

Observing that the Australians were holding a long frontage, the Germans launched a spoiling attack in this southern sector of the battle. Attacking with four divisions on 15 April, they penetrated the frontline and captured Lagnicourt-Marcel, but counter-attacks routed them. On 23 April the British attacked towards Vis-en-Artois. They seized Guémappe, but could advance no further, having suffered heavy losses in the process. The Germans attempted to recapture Monchy-le-Preux, but the Newfoundlanders (of 29th Division) were able to hold the village until reinforced. The attack was called off the next day.

Although Vimy had been stormed successfully, difficulties in securing its south-eastern flank had left the position vulnerable. British and Canadian troops launched an attack towards Arleux-en-Gohelle on 28 April. While the Canadians took this place relatively easily, the British capture of Gavrelle was harder won. German counter-attacks the next day were repulsed.

On 3 May 1917, major attacks were launched along the entire front. In the north, the Canadians captured Fresnoy but lost it to counter-attack two days later. In the centre, along the Scarpe, the attack was unable to make any significant headway and was called off the following day after incurring heavy casualties. In the south, 2nd Division attacked east of Bullecourt while 62nd Division attacked the village, which was finally taken by 7th Division. It was held despite two weeks of fierce counter-attacks.

Commentary

By the standards of the Western Front, the gains of the first day of the Arras offensive were spectacular. A lot of tactically important ground was gained for relatively few casualties and several operationally significant places such as Vimy Ridge were captured. Furthermore, the offensive succeeded to some extent in drawing German attention and forces away from the Aisne. The Battle of Arras might have been deemed a major victory for the BEF had the heavy casualties during the latter stages not offset these early achievements. By its conclusion, the battle was overshadowed by the larger failure of the Nivelle Offensive. The BEF, meantime, had paid a high

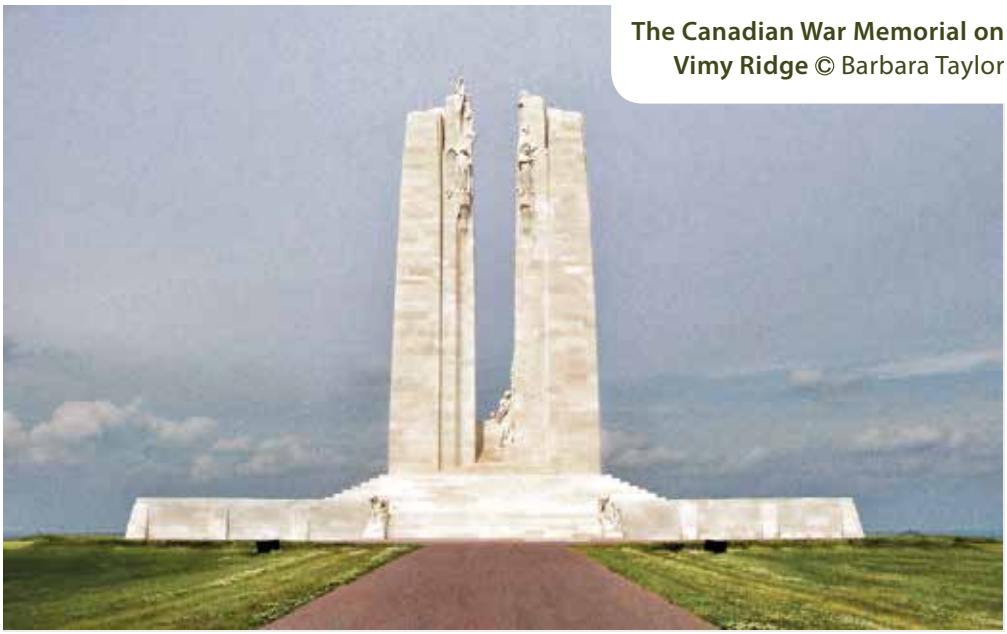
price and held little ground beyond that captured at the outset. While 9 April stands as one of the BEF's best days of the war, 3 May stands as one of its worst. BEF casualties totalled 158,660 (11,004 Canadian) for the whole of the battle. Although Allenby received tribute from Haig, Allenby's subordinates were unhappy with him. So he was transferred to assume command of British forces in the Middle East, where things were not going well. He regarded the transfer as a demotion but was to achieve great renown against the Turks in this theatre of war.

German casualties are hard to determine but they may have been not far short of the British Empire total. When it became clear that a major factor in the British success was a series of failures in the German command, Ludendorff sacked several officers, including von Falkenhausen. Ludendorff learned major lessons from the battle and immediately ordered training in manoeuvre for his counter-attack divisions.

Twenty-five Victoria Crosses were awarded for the battle, both on the ground and in the air. The poet Edward Thomas was killed on the first day. Siegfried Sassoon was wounded; while recuperating he wrote his scathing poem 'The General'.

In 1936 King Edward VIII unveiled a striking memorial to the Canadian dead of the First World War on the commanding Hill 145 on Vimy Ridge. While much attention is rightly paid to the stunning success of the Canadians at Vimy, the parallel achievements of the three Scottish and other British and Australian divisions in the battle should not be overlooked. Thus it is highly fitting that the operations on the Scarpe will be commemorated as a Scottish national event on the centenary of the battle on 9 April 2017.

John Peaty



The Canadian War Memorial on Vimy Ridge © Barbara Taylor

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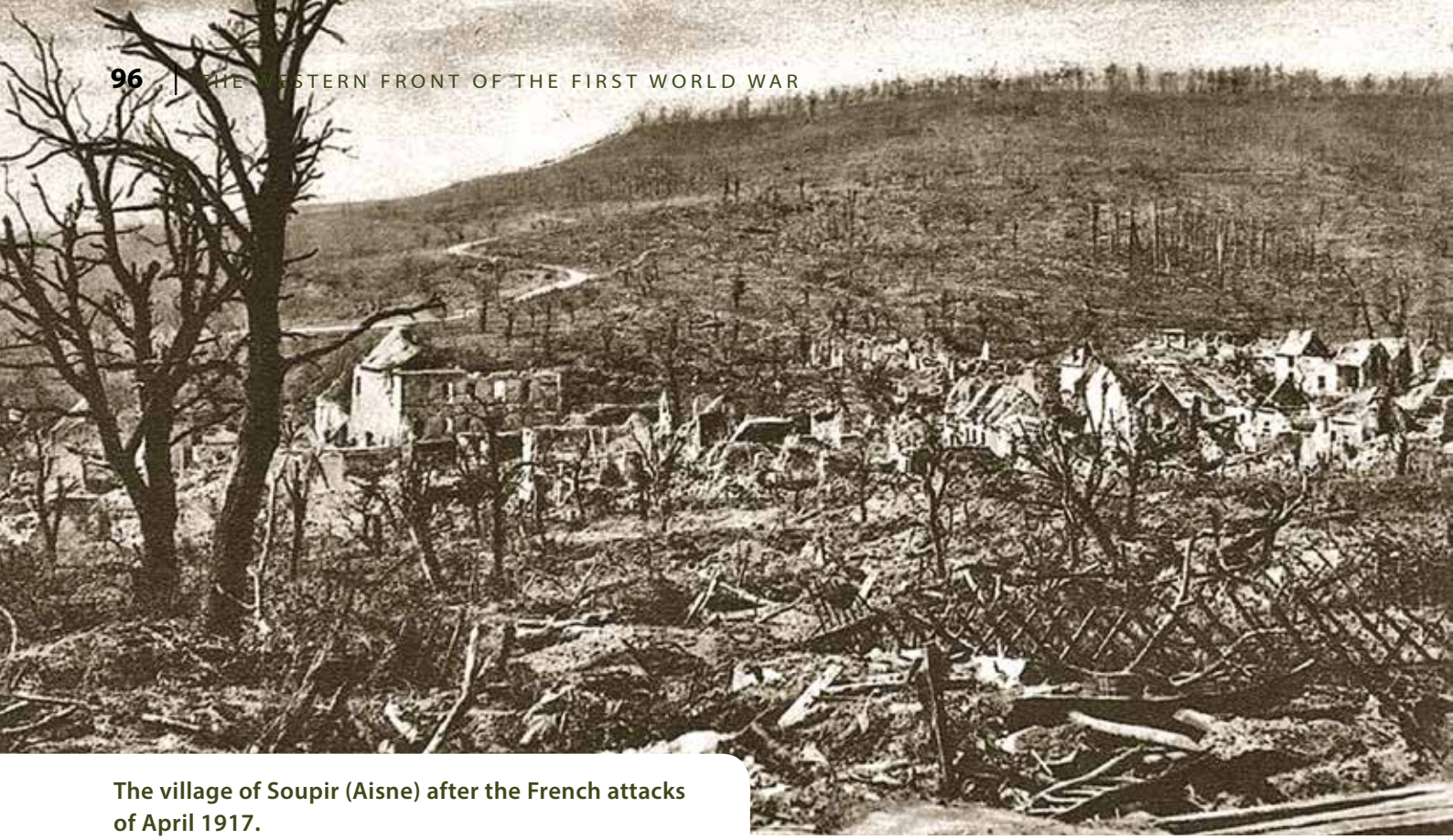
14. The Second Battle of the Aisne: The Nivelle Offensive

(16 April – 9 May 1917)

Description	French	German
Commanders-in-Chief	General Robert Georges Nivelle	Crown Prince Wilhelm of Germany and Prussia
Principal Forces Engaged	**French Reserve Group of Armies (Micheler)** Fifth Army (Mazel) Sixth Army (Mangin) Tenth Army (Duchêne) **French Central Group of Armies (Pétain)** Fourth Army (Antoine) 83 Divisions 1,200,000 men 4800 artillery pieces 1000 aircraft 150 tanks	**Crown Prince Group of Armies** First Army (von Below) Third Army (Rothmaler) Seventh Army (Boehn) 55 Divisions 700,000 men 2430 artillery pieces 640 aircraft
Context	Attempted breakthrough north of the river Aisne after engagement of German strategic reserves by the British army in the Battle of Arras starting on 9 April 1917.	Defensive action using the tactical principles developed following the Somme.
Casualties	ca. 185,000 including 4,000 prisoners	ca. 160,000, including 23,400 prisoners
Consequences	The French army mutinied. Pétain was appointed to restore order and confidence. The French army abandoned prolonged attritional offensives for the remainder of 1917.	The Germans obtained an unexpected breathing space in the West after their mauling on the Somme.

Introduction

At the end of 1916 the French and British governments found the advice of Haig and Joffre that the war could not be won quickly or without further heavy casualties unpalatable. They found a solution in General Robert Nivelle, a national hero of Verdun, who aimed to exploit the fact that that the Germans were exhausted. In his view, a violent surprise blow would rupture the German lines and achieve a decisive breakthrough within 48 hours. The Allied governments appointed Nivelle as supreme commander, subordinating the BEF to the French temporarily. The British would strike near Arras and on the Somme to draw in the German reserves. The French army would then attack northwards on the Aisne with a surprise



The village of Soupir (Aisne) after the French attacks of April 1917.

attack using massed artillery and tanks for the first time. In February 1917 the Germans withdrew from the 1916 Somme battlefield to a shorter, better fortified position, the Hindenburg Line. This move disrupted Allied plans and released German troops to deepen their defence and to provide reserves.

The Ground

The limestone ridge running east to west between the Aisne and Ailette is known as the Chemin des Dames.[1] It has been of military significance since ancient times: both Caesar and Napoleon fought battles in the area. Further southeast the front lines stretched into the Champagne plain east of Reims where the Moronvilliers Hills dominated observation. The River Aisne was an obstacle to movement, as was the damage caused by the bombardment.

Planning and Preparation

The German positions had been occupied since September 1914, strengthened using an extensive network of underground quarries, and improved by considerable tunnelling. The German deployment and defence was based on a new flexible tactical doctrine of greater depth and vigorous counter attacks under unified command.[2]

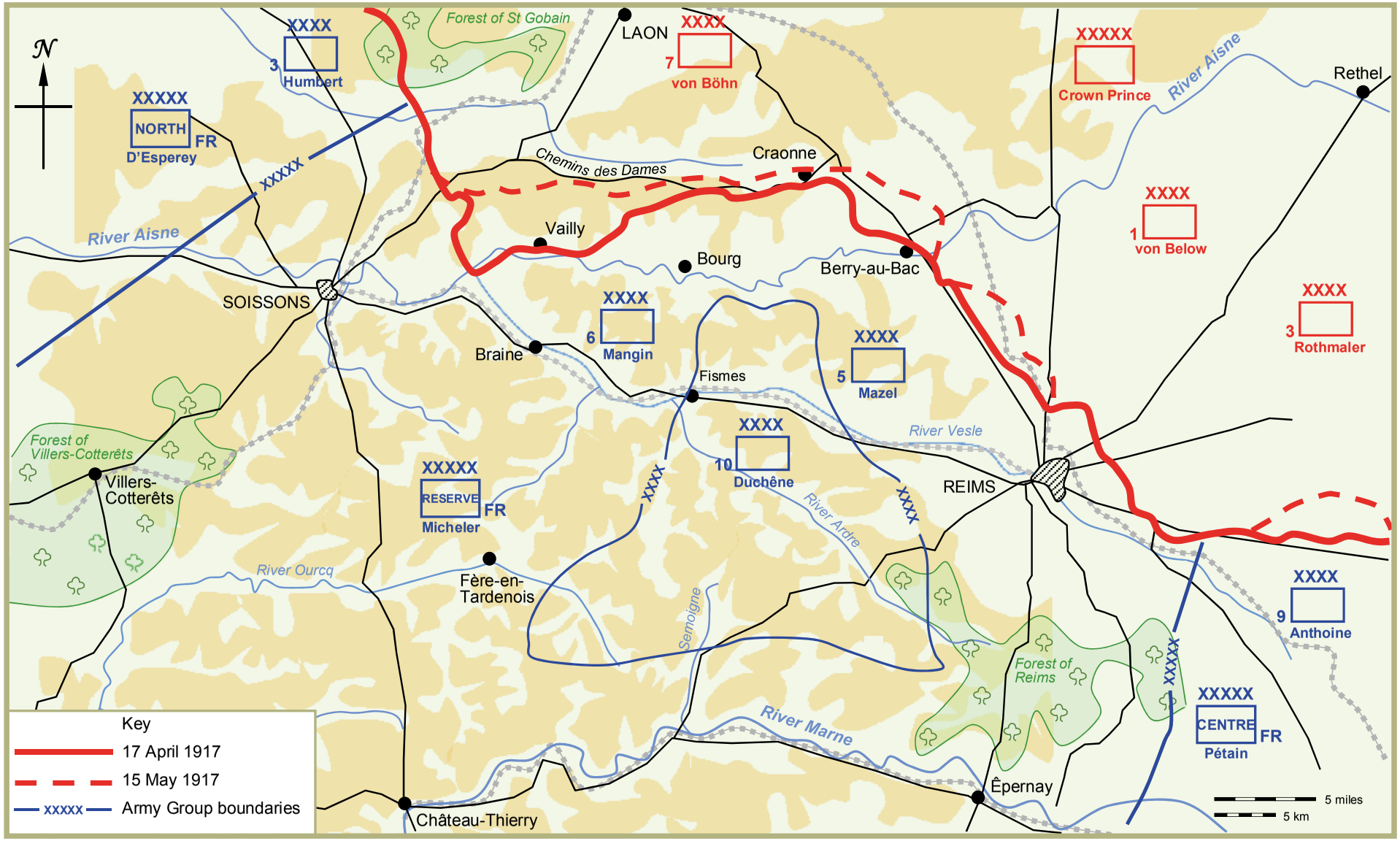
North of the Aisne, at the centre of the main effort of the French offensive, the German outpost line was strung along the Chemin des Dames Ridge while their main position was in the Ailette valley on the reverse slope. In keeping with their new doctrine of elastic defence, the Germans held in depth a high proportion of their troops ready to counter attack.

The French planned to attack on a 65-kilometre frontage north of Reims, with a subsidiary attack to the east of that city between Prunay and Aubérive, along the Moronvilliers Hills. On the Chemin des Dames the French deployed an artillery piece every 20 metres. The French infantry was expected to follow a creeping barrage, which would advance at a rate of 100 metres per minute. The Fifth Army would attack on the western half of the Chemin des Dames, with the Colonial Corps attacking from the west. The Sixth Army would attack the right hand side and north-eastwards across the plain north of Reims. The phase lines estimated an advance of 10 kilometres on the first day. A fresh army supported by 128 tanks would exploit the anticipated breach. The following day the Fourth Army would attack in Champagne. The French placed particular faith in the élan of their African troops, which formed two of the assault corps in Mangin's Sixth Army, which was also reinforced by British heavy artillery. Three brigades of Russians attached to the Fifth Army voted to take part in the attack.

Many senior commanders had misgivings and only relented after Nivelle promised to cancel the operation after 48 hours unless a breakthrough had been achieved. Nivelle's optimism and promise of success, however, spread among the French troops who appear to have

[1] This terrain is described in more detail in Chapter 4.

[2] Described in Chapter 13.



Map 14.1 – The Second Battle of the Aisne (The Nivelle Offensive), 16 April – 9 May 1917

approached the battle with confidence. French security was extraordinarily lax. The offensive was discussed in the media; German raiders captured operations orders. The two-week long preparatory bombardment eliminated any residual uncertainty. The Germans reinforced the sector, doubling the number of divisions and batteries.

The Battle

The Preliminary Bombardment, 2-15 April 1917. The preparatory bombardment was hampered by the weather and the aggressive German fighter force, which hindered the French use of aircraft to direct fire against reverse slope positions. Despite the number of French artillery pieces, the German positions were too deep and extensive for the bombardment to be effective. By the eve of the attack the German wire had not been consistently cut; the level of devastation was visibly less than that seen on the Somme and Verdun battlefields. The majority of Germans waited underground, unscathed.

16 April 1917. H-Hour was 0630 hours. The weather was cold, wet and very windy and the French infantry froze waiting to assault. Far from advancing at a rate 100 metres per minute deep into the German positions, the French struggled to get beyond the German first line in the face of concentrated machine gun and artillery fire. The barrage moved on uselessly away from the infantry. The Germans counter attacked, and in some places reappeared from shelters and tunnels behind the attackers. H-Hour for the Colonial Corps, due to attack on the extreme left, had been delayed by three hours to minimise the risks of friendly fire from the anticipated breakthroughs on the southern and the western faces of the Chemin des Dames position. The Senegalese managed to capture Mont de Singes with the support of British artillery, but were forced to withdraw.

The Fifth Army achieved comparatively greater success. In the Juvincourt sector where the attack was supported by tanks, the French penetrated the German defences as far as the second line. The 13.5-tonne Schneider tanks, however, were restricted by their poor cross-country performance to a narrow line of advance and came under concentrated artillery fire. Most tanks were knocked out or broke down before they reached the German lines.

17 April – 15 May 1917. The Sixth Army was required to capture the remainder of the Chemin des Dames and to protect the anticipated success of the Fifth Army. The appalling wet weather persisted overnight and prevented effective artillery preparation. Further attacks were called off while the French grimly hung on to their limited gains. The Fourth Army in Pétain's army group attacked, penetrating the German line to a depth of 500 metres – 2.5 kilometres. These assaults were developed methodically, seizing the crests of the Moronvilliers Hills. The Germans launched costly counterattacks in an attempt to recover them.

Despite Nivelle's earlier promise, he pressed for the operation to continue with limited tactical objectives. The Tenth Army was deployed to seize commanding features on the Chemin des Dames. On 18 May the Germans pulled back from the Chemin des Dames, losing heavily during this retrograde movement. The French continued to make small gains during the rest of April and into May.

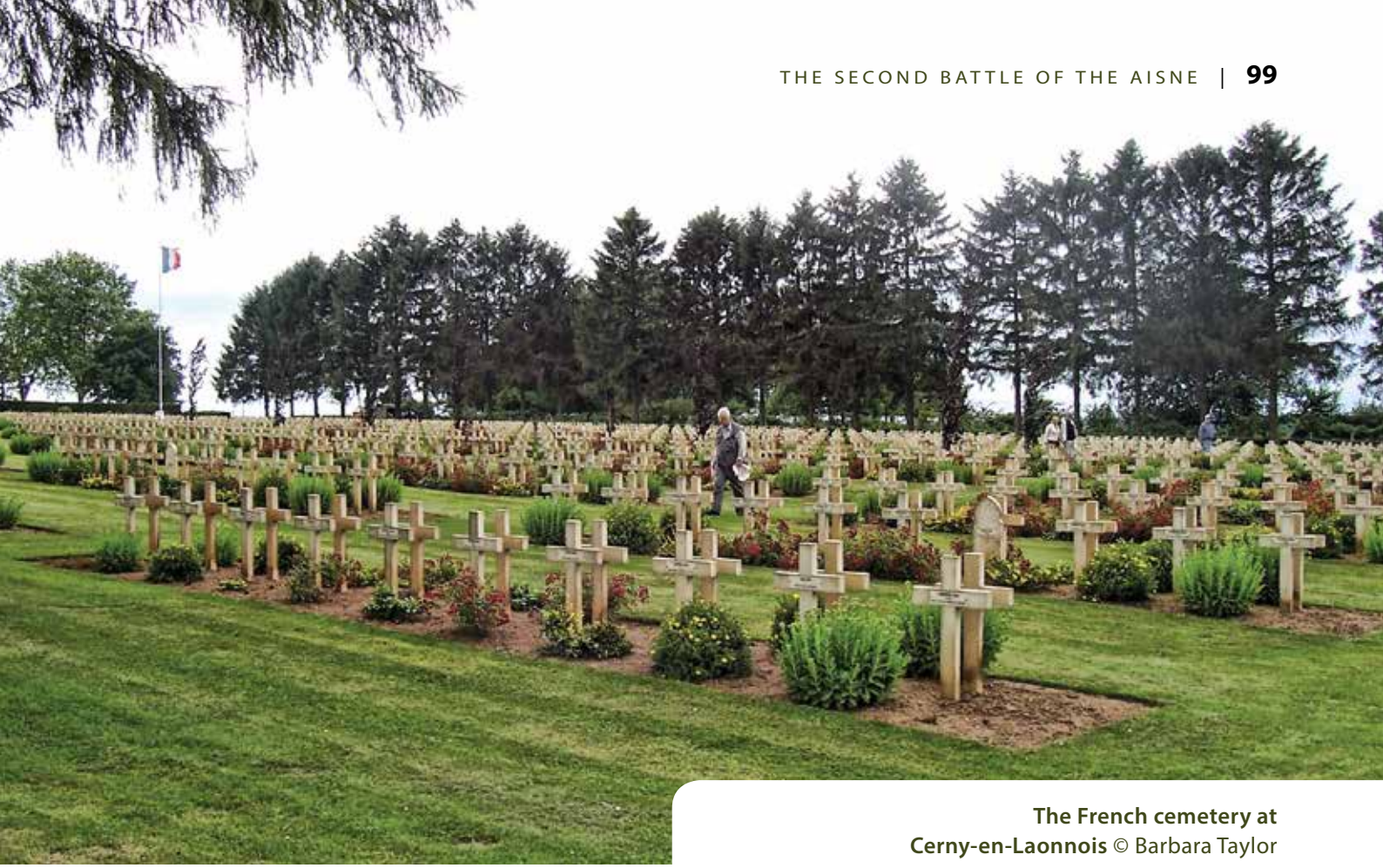
By this time, however, French casualties had mounted having achieved little advantage: Nivelle had lost the confidence of the French government and his subordinates. Pétain was appointed, initially as the French army's chief of staff on 26 April, and then assumed Nivelle's place as commander-in-chief on 15 May 1917.

The Mutinies

In the fourth year of war, French soldiers were disappointed and increasingly disillusioned. In consequence, morale and trust in the chain of command broke. The first mutinies began on 4 May 1917 peaking a few weeks later and continued with diminishing levels until January 1918. Despite individual acts of insubordination, these were effectively strikes, with units refusing to take part in offensive operations. Pétain took effective measures to suppress the mutinies, reimposing discipline and arresting ringleaders. Forty-eight leading mutineers were executed. The commander-in-chief also addressed soldiers' grievances and improved their administration, such as providing regular leave and improving the quality of food. After revising tactical and operational doctrine, Pétain then initiated a series of powerful set-piece attacks for the remainder of 1917 to restore the French army's confidence. The Germans do not seem to have been aware of the French mutinies.

Commentary

At Verdun Nivelle enjoyed adequate and successful artillery support, surprise and limited attainable local objectives. None of these tactical advantages featured on the Aisne. In the spring of 1917, he offered British and French politicians an alluring promise of a strategic victory, which was politically acceptable rather than militarily achievable. The French army's hopes in gaining a decisive,



The French cemetery at Cerny-en-Laonnois © Barbara Taylor

strategic success had been confounded. As the British army's doctrine *Application of Force* (1985) concludes,

> The Chemin des Dames attack demonstrates what may happen when soldiers, already jaded by two and half years of war, are buoyed up with promises of a cheap and quick victory only to have their hopes dashed and their morale shattered by an unexpectedly bloody reverse. The aftermath shows how firm and understanding leadership can repair the damage to an army's spirit. [4]

In pure material terms, however, the offensive might be considered a moderately successful battle of attrition. French losses were heavy, but no worse than those of previous years of war. They gained more ground and, according to official figures, inflicted proportionally heavier German losses and a higher proportion of prisoners than for the first month of the Somme. On balance, the Nivelle offensive (combined with first Russian revolution) achieved for the Germans an unexpected reprieve from concerted Allied pressure. As a result, the Germans had to engage primarily the British army in a further campaign of attrition on the Western Front in 1917, winning a vital breathing space while Russia imploded and a renewed campaign of unrestricted submarine warfare attempted to bring Britain to terms.

The Battlefield Today

Much of the Chemin des Dames was designated as devastated land and turned over to forestry, preserving the trenches, bunkers and munitions. There are interpretation panels and monuments in many of the key locations. The battlefield is largely the same ground as the British Aisne battlefields of 1914 and 1918.

The Caverne du Dragon museum is an underground battlefield and offers interpretation and local guides. There are several memorials on the Chemin des Dames road commemorating different French units, including the Senegalese and the Basques. The destroyed village of Craonne has a symbolic significance as the subject of a bitter anti-war song, the "Chanson de Craonne", banned in France until 1974.

The evocative adjacent French and German cemeteries at Cerny-en-Laonnois, on the crest of the Chemin des Dames, on what would have been the German front line, contain the graves of 7,526 Germans, 5,150 French and 54 Russian soldiers.

Frank Baldwin

[4] The Army Field Manual, Volume 1, *The Fundamentals, Part 1, The Application of Force* (Army Code No. 71344 (Pt. 1) (London: Defence Council, 1985) p. 162.

Nine statues paying tribute to the courage of African soldiers killed during 1917. © Matt Leonard

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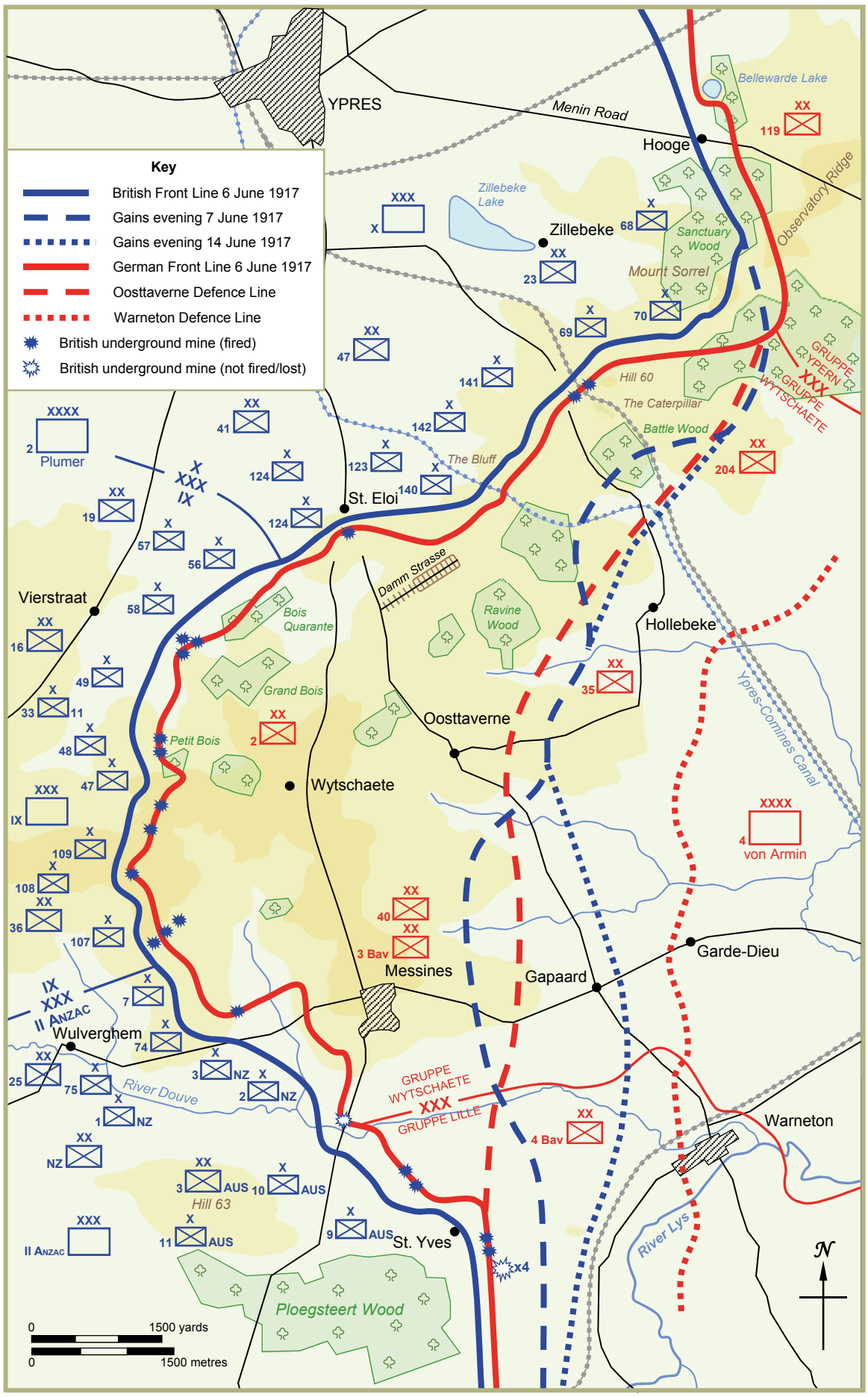
15. The Battle of Messines
(7 – 14 June 1917)

Description	British Empire	German
Senior Commanders	General Sir Herbert Plumer, army commander	General Friedrich Sixt von Armin, army commander General of Cavalry Maximilian von Laffert, corps commander
Principal Forces Engaged	**British Second Army** X Corps: 23rd, 40th, 41st & 47th Divisions IX Corps: 16th (Irish), 19th & 36th (Ulster) Division II Anzac Corps: 3rd & 4th Australian Divisions, New Zealand Division, 25th Division; 72 Mk IV tanks	**Elements German Fourth Army** XIX Corps, specifically Gruppe Wytschaete Five front-line divisions, reinforced by two 'Eingreif' counter-attack divisions once the battle started.
Context	Following the Arras offensive of April-May 1917, the Battle of Messines of June was an innovative, meticulously planned and vigorously conducted precursor to the highly costly Third Battle of Ypres (August-November 1917). The seizure of the Messines Ridge was a necessary condition for this major offensive.	The German position at Messines, known as the 'Wytschaetebogen' or Wytschaete Salient, had overlooked British lines immediately south of Ypres since 1914. Its possession meant that any attempt by the British to break out of the Ypres Salient could be enfiladed from the south. Hence it was vital ground that had to be held.
Casualties	24,562	26,087
Consequences	Although an outstanding tactical success, involving the detonation of 19 massive mines under the German front line, Messines led to undue optimism by the British High Command as it approached Third Ypres. In recent times, the shared memory of Messines has become a significant factor in the Irish peace process.	Although the Germans lost the Messines Ridge, the British were unable to exploit this opportunity to drive on towards the Gheluvelt plateau and Passchendaele ridge. The six-week delay between the Battle of Messines closing down on 14 June and Third Ypres opening on 31 July 1917 gave the Germans precious time to strengthen their defences.

Introduction

To the chagrin of revisionist military historians, the persistent popular understanding of the British campaign on the Western Front is one of consistent and extremely costly failure brought about by inadequate leadership and generally poor strategy, tactics and command. At Loos in 1915, during the Somme Offensive in 1916, and throughout the brutal Third Battle of Ypres (or Passchendaele) in 1917, the lives of tens of thousands of Commonwealth soldiers were lost and little or no ground was gained. From the perspective of the ordinary observer, these major offensives can often seem difficult to understand today. How could such extraordinary mistakes have been made at such enormous human cost? Curiously, however, the



Map 15.1 – The Battle of Messines, 7–14 June 1917

one battle that can be said to have been an unambiguous success and was arguably a masterpiece of operational planning and execution tends to be overlooked, at least by comparison with the Somme and Passchendaele. The Battle of Messines, which took place from 7 to 14 June 1917, was meticulously and innovatively planned and fought with extraordinary tenacity by troops from across the British Empire who achieved most of their objectives within hours of going over the top.

The Ground

Messines (now known as Mesen) Ridge lies in the rolling countryside south of Ypres (now Ieper) that was seized by the German forces in the opening phase of the war in 1914. From their positions on the ridge, as with many other sectors on the Flanders front, German artillery and infantry units were able to look down upon their Allied counterparts who held relatively flat, waterlogged terrain. Importantly, the German lines along the Messines Ridge formed a salient that jutted into British territory that countered the British salient further north around the city of Ypres. Up to the summer of 1917, the trench lines from north of Ypres to the French border thus ran in an s-shape that was more advantageous for the Germans, who controlled virtually all of the high ground.

Strategic Context

From 16 April to 9 May 1917, the great Nivelle Offensive raged along the French sector of the front between Arras in the north and the Chemin des Dames Ridge in the south. This was a Franco-British operation, and while there were some earlier tactical successes, notably at Vimy Ridge, few of the main objectives were achieved, and the daily death-toll for both Commonwealth and French forces was extremely high. The offensive had a particularly devastating effect on the morale of French troops, many of whom had been on active service since the earliest days of the war. By the end of April a series of mutinies had broken out among French units that seriously threatened the Allied war effort on the Western Front. The Battle of Messines was designed in part to relieve German pressure on the French in this sector while the mutinies were resolved, and partly to straighten the front-line south of Ypres in anticipation of a British offensive, which would take place later in the summer and become known as the Third Battle of Ypres or Passchendaele. The latter objective was also part of a longer-term British strategy to consolidate the Commonwealth positions in west Flanders, which had changed little since the Second Battle of Ypres in April 1915.

Planning and Preparation

The essential British battle plan was to advance across a ten-mile front from St. Yves near Ploegsteert Wood in the South to Mt. Sorrel in the north to a maximum depth of just under two miles. By so doing the British hoped to capture the ridge itself and the German-held villages of Messines, Wytschaete and Hollebeke, and eliminate the German salient. One of the more distinctive features of the preparation for the Battle of Messines was the formation of a complex warren of mineshafts and tunnels dug by British, Canadian and Australian miners under the German positions along the ridge. The practice of detonating concentrated amounts of explosives under enemy lines had been tried before on the Western Front, by both sides, but the tactic had never been carried out on such an ambitious scale. The British had begun mining operations under the German positions around the village of Wytschaete as far back as March 1916. Over the course of the following year, Commonwealth tunnelling companies fought an often fierce subterranean campaign against German sappers who were conducting their own counter-mining operations. By the early summer of 1917, no fewer than 24 deep and lengthy mines had been dug under German lines, at the heads of which lay a total of 455 tonnes of ammonal explosive. One mine had been damaged by German counter-mining in June 1916 and was not used in June 1917; four others were deemed to be outside the battle zone and were not ultimately detonated. Following a brief pause after the preliminary artillery bombardment, the detonation of the explosives in the remaining 19 mines would mark the moment at which Commonwealth troops would begin moving forward on the first day of the battle.

In combination with this complex mining operation, a gradual build-up of men and materiel in the British sector was carried out from the beginning of May. The 11th and 24th British Divisions and the 4th Australian Division were moved north from Arras to serve as potential reinforcements for the British Second Army, which was tasked with spear-heading the attack. The divisions of the various corps of the Second Army, under the command of General Sir Herbert Plumer, were composed for the most part of men from across England, Ireland, Australia and New Zealand. This infantry arm was supported by a closely co-ordinated combination of artillery units, Royal Flying Corps formations, and no fewer than 72 newly-produced Mark IV tanks. Observation and fighter aircraft worked very closely and effectively with artillery units in the ten days before the battle in a series of operations, which can be regarded as an exemplary moment of

The crater at Hollandse Schuur, Wijtschate, the result of one of the 19 mines detonated on 7 June 1917 heralding the BEF's assault of Messines Ridge.
© Mike St. Maur Sheil/FieldsofBattle1418.org

combined-arms warfare. Drawing on lessons learned at the Battle of Arras the previous April, Second Army had devised a highly sophisticated pre-battle artillery plan. Thanks to recent improvements in gun calibration, more precise weather data, much more detailed maps of the terrain, and mass air observation, British artillery fire was extremely accurate by comparison with earlier offensives. The main preliminary bombardment began a week before the battle on 31 May, and between then and zero hour on the 7th, no fewer than 2,200 British guns hammered the German trenches, cut wire, and conducted counter-battery fire against German artillery.

The Battle

Zero hour was fixed for 0310 hours on the morning of 7 June 1917, when it would still be dark but visibility would be rapidly increasing. By 0300 hours the first-wave attacking units had reached their jumping-off points, British artillery had fallen silent, and the morning was so quiet that birdsong could clearly be heard. Just ten minutes later, the detonation of the nineteen mines completely pulverised Messines ridge, filled the early morning sky with thousands of tonnes of earth and the noise of the explosions was so deafening that, according to some reports, it could be heard as far away as Dublin. The almost total destruction of the crest of the ridge killed an estimated 10,000 German troops within a matter of minutes and had an immediate and devastating impact on the morale of the survivors.

As soon as the debris from the explosion of the mines cleared, nine Commonwealth divisions began advancing toward the German lines under the protection of a creeping artillery barrage, and supported by tanks and gas-shells fired into the area just behind the German forward positions. Almost all initial objectives were taken within the first three hours of the battle. Reserve units from General Gough's Fifth Army and the French First Army mounting supporting attacks reached their own final objectives by mid-afternoon. German forces began counter-attacking the following afternoon but had little success. In fact, they lost yet more territory as they continued to counter-attack until 14 June, by which stage the entire Messines Salient was in Allied hands.

Commentary

The Battle of Messines should by no means be regarded as a walk-over; certain British units encountered very stiff resistance indeed and the crowding of British troops on the ridge in the opening hours of the battle led to major

losses. Very accurate German artillery fire also caused heavy casualties during the counter-attacking phase. Messines was nonetheless a remarkably successful action in the context of the then three-year Allied campaign on the Western Front. The two main objectives of the battle – capturing the salient and easing pressure on the French forces to the south – were both undoubtedly achieved. The battle was also a very rare, if not unique, case of an engagement on the Western Front in which the attacking forces suffered slightly less casualties than the defenders. These successes did arguably, however, make the British High Command overly-optimistic about Third Ypres, which, although it took place not much further north of Messines just six weeks later, was fought in very different terrain, under very different conditions, and with dramatically different results.

The Resonance of the Battle of Messines Today

The Battle of Messines was a truly all Empire affair, with units from Australia, New Zealand, Canada, Britain and Ireland serving with distinction in the preparations for the battle and over the course of the action itself. Yet over the past 20 years or so, the battle has taken on a particular significance for people from the Republic of Ireland and from the traditionally divided communities within Northern Ireland. Two Irish divisions fought at Messines, the 16th (Irish) Division and the 36th (Ulster) Division, and the officers and men of both divisions marched into battle together along the Kemmel Road. The 16th was composed, for the most part, of Catholic officers and men from across the island from nationalist communities that desired some form of independence from Britain. The 36th, in stark contrast, was made up mostly of men from Protestant communities in the north of the island with a strong sense of British identity that were staunchly unionist and against any change in the Irish relationship with Britain.

Well over 200,000 Irishmen from both communities and from all walks of life served in the British armed forces between 1914 and 1918. It should be remembered that many of these men were loyal to diametrically opposed ideologies and had very different plans for Ireland's future in the post-war world. Nationalist and unionist soldiers nonetheless endured the same deprivation and horror on the Western Front and elsewhere, and at the Battle of Messines in 1917 they fought and died together.

In the immediate post-war period, much of Ireland was the scene of an increasingly bitter war of independence,

The Irish Peace Tower, Mesen (Messines), Belgium.
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which ended with a truce in July of 1921 and an Anglo-Irish treaty, which was signed in December of that year and ratified in 1922. Ireland was now divided between the mostly unionist six counties in the north-east, which became Northern Ireland, and the remaining 26 counties, which seceded from the United Kingdom and ultimately became the Republic of Ireland. For the men and women of the unionist community in Ulster, the memory of the First World War became a central part of their culture and

identity over the course of the twentieth century. The Battle of the Somme in particular, on the first day of which the 36th Division suffered appalling losses, attained an almost sacred significance. The Ulster Tower at Thiepval on the Somme, which was officially unveiled in 1921, is dedicated to Unionist men and women who served the British war effort and has been an important site of pilgrimage for unionists for almost a century.

The non-unionist Irish memory of the First World War has always been much more complex. Catholic veterans of the conflict were not forgotten in nationalist Ireland in the decades after the war, but at an official and popular level there was definitely greater esteem accorded to the relatively smaller number of Irish republicans who fought in the Easter Rising of 1916 and the War of Independence. By the 1970s and 80s, the Northern Irish conflict had given rise to an intense cultural entrenchment in which commemoration of the First World War was something about which nationalists in the north, and most of the population of the Republic, was either indifferent to or simply unaware of.

The peace-process which very slowly began to gather pace in the aftermath of the IRA ceasefire of 1994 and the Good Friday agreement of 1998 brought about a gradual change in attitudes to the war across the entire island. In the past two decades an ironic but positive situation has emerged in which a shared memory of First World War, a conflict that was extraordinarily violent and destructive, has been used to help people move beyond the violence of the much more recent past. Popular memory of the war has thus allowed unprecedented bridges to be built between the divided communities in the north, between north and south, and indeed between Britain and Ireland. Much of this process of using the past to promote better relations in the present has focused on the Battle of Messines.

On 11 November 1998, just seven months after the signing of the Good Friday Agreement, President Mary McAleese and Queen Elizabeth II formally unveiled the Irish Peace Tower at the Island of Ireland Peace Park just south of the village of Messines (now Mesen). The tower is a replica of a medieval Irish round tower and was built using masonry from a former British army barracks in Tipperary and stone from the ruins of a former workhouse near Mullingar. The structure forms the centrepiece of a small peace park which, along with the tower itself, were designed to stand as a permanent memorial to all the Irish dead of the First World War and as a testament to the modern-day Irish desire for peace and reconciliation.

Edward Madigan

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16. The Third Battle of Ypres (Passchendaele)

(31 July – 20 November 1917)

Description	Allied	German
Commanders-in-Chief	Second Army (Plumer) Fifth Army (Gough)	Fourth Army (Sixt von Armin)
Principal Forces Engaged	**British Expeditionary Force** **Second Army** Five corps: IX, X, I (ANZAC), II (ANZAC), Canadian Corps **Fifth Army** Five corps: II, VIII, XIX, XVIII and XIV Corps **Allies** Elements of French First Army (6 divisions) and the Belgian army Total Allied divisions engaged during the offensive: 50 British and 6 French.	Gruppe Dixmunde (2 divisions) Gruppe Ypres (5 divisions) Gruppe Wytschaete (8 divisions) Total German divisions engaged during the offensive: 77 to 83.
Context	A British offensive to break out of the Ypres Salient, capture strategic communication centres and clear the north Belgian coastline.	German Fourth Army consolidated in defence along the vital ridges surrounding the Ypres Salient protecting their position in Belgium.
Casualties (estimated)	British: 300,000 French: 8,500	260,000
Consequences	The partial capture of the Passchendaele Ridge was a limited tactical success that improved conditions for the British in the Ypres salient, but it came at a terrible cost. The number of casualties reduced the British government's confidence in its military leadership. Arguably, however, there was some strategic benefit: in fixing the German army, the offensive prevented a major attack on the French.	Such was the pressure on the German army in Flanders, it was prevented from delivering a potentially war-winning blow elsewhere on the French. Seriously weakened in the West in 1917, if it had not been for the release of fresh troops from the Eastern Front, the German army would not have been in a position to transition to the offensive in 1918.

Introduction

The Third Battle of Ypres (Third Ypres) was one of greatest battles of attrition of the First World War. It comprised a series of nine set-piece battles conducted in three distinct stages and culminated in the capture of the village that lent its name to the offensive – Passchendaele. It became infamous for the high number of casualties, the particularly gruelling nature of the fighting and its supposed overall futility. Heavy rainfall and a prolonged preliminary bombardment had transformed much of the battlefield into a swamp. The Germans, operating from the higher ground in well-prepared defensive positions organised around a network of concrete pillboxes, inflicted heavy casualties on Allied troops. After fourteen weeks of bitter fighting by British Empire forces, including Australian, Canadian and New Zealand divisions, only a partial success on the initial objective of the Passchendaele Ridge had been achieved. Having pushed the German lines back an average of only four miles (seven kilometres), this advance represented a gain of less than 150 metres/day.

Strategic Context

By 1917 there was a significant difference in opinion between the British government and the military over where and how Britain should make its main effort in the war. By that summer, however, the strategic situation was compelling Britain to engage the main body of the German army on the Western Front in order to prevent the Germans from inflicting crippling defeats on its Allies. The Russian army's position on the Eastern Front had become increasingly precarious following the February revolution; if the Russian army were to collapse, many German divisions would be released to reinforce in the West with potentially decisive results. In the West the French army was restoring confidence following the mutinies that had broken out after the disastrous Nivelle offensive in the spring.[1] There was also increasing pressure to support the southern Italian front. The British chose to attack in Flanders as it was an area where they thought the Germans would have to fight. Flanders was strategically important to the Germans as it protected their entire position in Belgium with no Hindenburg Line to the rear. The key to sustaining their defence was the railway 19 kilometres behind the German front, which ran through Roulers (now Roselare) and Thourout (now Torhout).

The British strategic intent was to break out of the Ypres Salient and capture the railway communications junction at Roulers, thereby causing the collapse of the German army's lateral communication system. Further exploitation would then follow with the clearance of the north Belgian coastline, which would deny the German navy the use of Belgian ports.[2] Haig also reasoned (although his cost/benefit analysis can be questioned) that even a limited advance would considerably improve the British defensive position in the Ypres Salient and substantially reduce the exceptional 'wastage' of troops and materiel from their current positions. It would also enable Allied guns to fire on to Ostend and Roulers, and render Dunkirk immune from long-range artillery fire.

Third Ypres was preceded by a highly successful preliminary operation launched on 7 June 1917 by General Herbert Plumer's Second Army to seize Messines Ridge.[3] This attack straightened and secured the southern arm of the Salient, an essential precondition to the main offensive. There then followed a six-week period of preparation and re-organisation before the start of the principal operation. With operational surprise now lost, the interval between Messines and Third Ypres was used expeditiously by the Germans to strengthen and deepen their positions in anticipation of a major British offensive to the east of Ypres.

The Plan

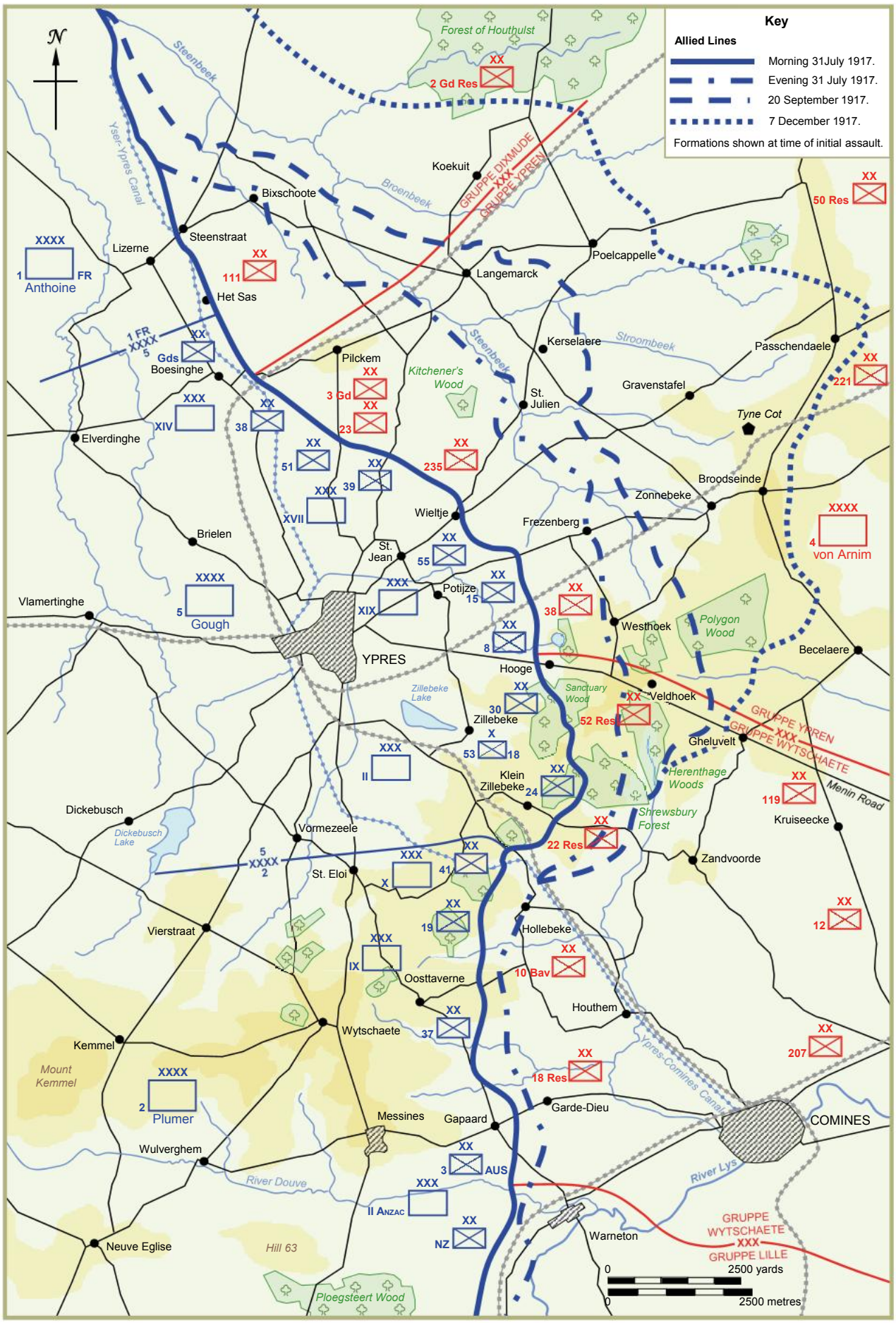
At an army commanders' conference on 14 June 1917, Haig laid out his objectives for Third Ypres. First there would be an attack by the Fifth Army to capture Passchendaele Ridge, the vital ground that dominated the Salient. Once secured, the Fifth Army would then strike out north-eastwards to seize the railway at Roulers while an amphibious assault involving elements of the Fourth Army would be launched on the Belgian coast at Nieuport (now Nieuwpoort).[4] The two armies would then link up and push on to Bruges and the Dutch frontier. Meanwhile, Second Army, having taken over the battlefield in front of Ypres, was to advance concurrently on Menin. While the plan was operationally daring, it depended on achieving early tactical success on ground that clearly favoured the defender. It was to prove hopelessly, if not recklessly, optimistic in view of the painful experience of previous

[1] The French army was able to conduct a series of offensives in the second half of 1917: the most notable of which was the Battle of la Malmaison (17-25 October), described at Chapter 17.

[2] The German navy had resumed unrestricted submarine warfare in early 1917, not only seeking to starve Britain, but also threatening the British lines of communication across the English Channel. The Admiralty strongly urged an offensive to clear the Flanders coast and prevent Belgian ports from being used as bases for German U-Boats and surface raiders. This threat, however, was over-stated as the U-Boats had the range to operate from German ports as well.

[3] Described at Chapter 15.

[4] Although never used, this intended amphibious assault was an integral part of Haig's plan. The British 1st Division was trained for this role and equipped with specially designed landing craft, and ramps for tanks to climb over the sea wall. Preparation for this operation was undertaken at the Tank Corps training areas at Merlimont and Erin-Blangy in the Pas de Calais region.



Map 16.1 – The Third Battle of Ypres, 31 July – 20 November 1917

Ammunition limbers moving up the Ypres-Menin Road, September 1917. © NAM

major offensives such as those at the Somme and at Arras. The British Government, increasingly concerned about the heavy casualty toll on the Western Front, was not convinced that an offensive in Flanders would be the best means of bringing the war to a successful conclusion. That said, Lloyd George was keen to see a decisive battle in order to end the war as soon as possible. Haig's plan was finally given the support of the War Cabinet on 22 July 1917, three days before the offensive was originally due to start, with the significant proviso that 'on no account' should the battle go the way of the Somme with 'protracted, costly and indecisive operations'.[5]

Haig entrusted the first phase to seize the Passchendaele Ridge to General Hubert Gough's Fifth Army because he saw Gough as the most offensive-minded of his army commanders. Erroneously believing he was expected to achieve rapid results when the Commander-in-Chief of the BEF actually envisaged a 'wearing out' battle with limited 'steps' leading to a breakthrough, Gough proceeded to plan a simultaneous attack on Pilckem Ridge and the Gheluvelt Plateau before seizing the Passchendaele Ridge. Although this concept of operation was against Haig's better judgement, he failed to overrule Gough, preferring to leave the final decision to the 'man on the spot'. Gough envisaged taking the German third line of defence on the first day of the offensive, an unduly confident advance of some 6,000 yards, and seizing the Passchendaele Ridge within four days. In subsequent phases over succeeding days, he intended that the Fifth Army should break out of the Salient altogether.

The Battle

A preliminary bombardment commenced on 16 July 1917 with the intention of launching the offensive on 25 July. However, a series of delays to the start of the offensive meant that the bombardment had to be maintained for a total of 15 days by which time 4½ million shells had been fired.[6] This prolonged shelling caused significant damage to the fragile land drainage system (an issue already known about), as well as wasting valuable time, resources and good weather. In the end, this postponement compounded the difficulties the offensive was already labouring under, not least the lack of surprise and the poor choice of ground.

The offensive finally started on 31 July 1917 and fell into three well-defined stages. The first consisted of three major engagements: Pilckem Ridge (31 July), which inflicted a heavy blow on the German forces at relatively little cost; Gheluvelt Plateau (10 August), where the initial gains made were reduced to almost nothing by

[5] Gary Sheffield, *The Chief: Douglas Haig and the British Army* (London: Arum Press, 2011) p. 231.

[6] As well as the delay in receiving final authority from the British War Cabinet, the French were delayed getting into position north of Ypres.

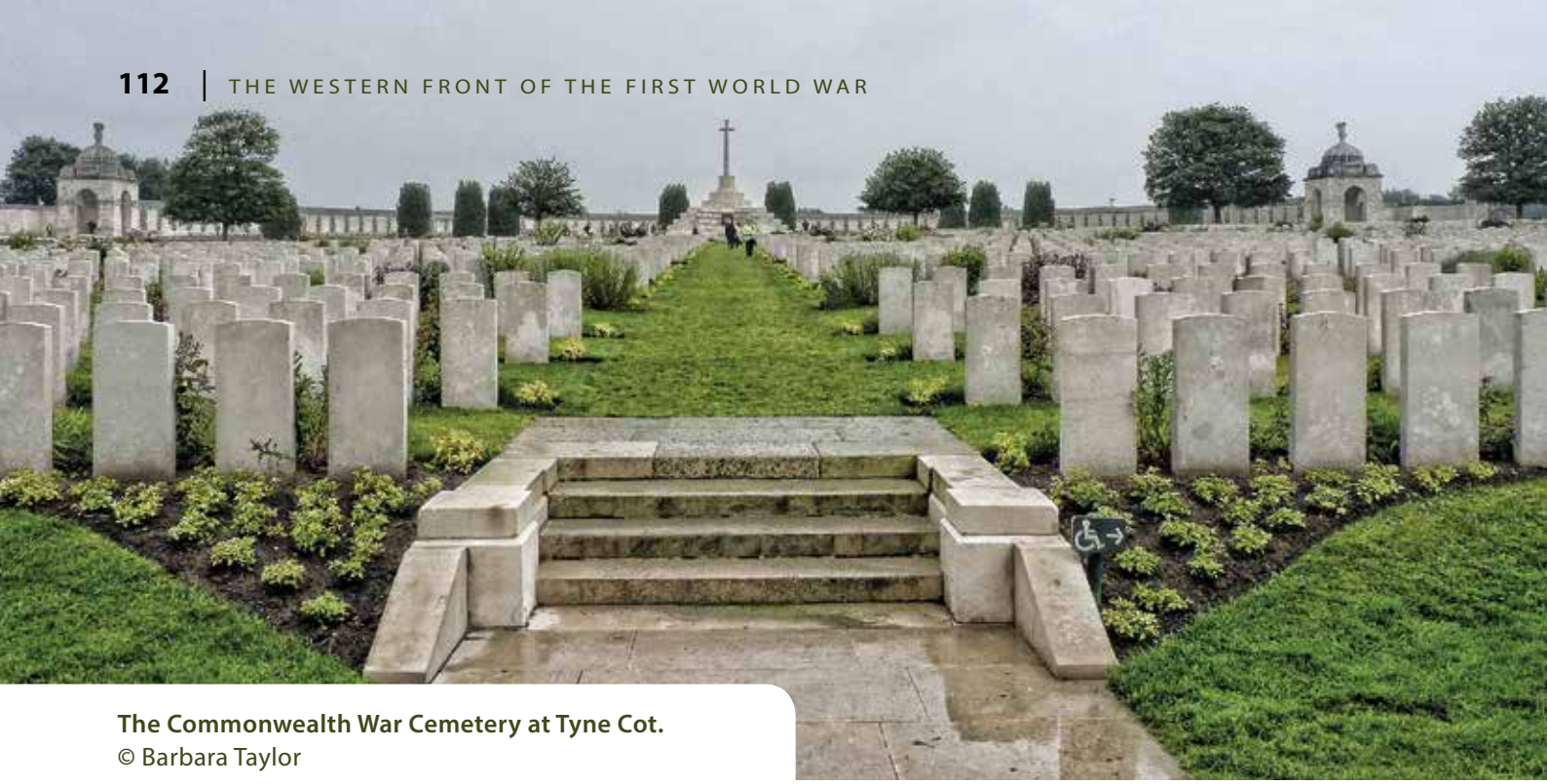
six strong German counter-attacks; and Langemarck (16 August), where the British made some limited gains. Progress however had been painfully slow and this first stage was a bitter disappointment to the Allies. It was not helped by Gough's decision not to concentrate his initial assault on the tactically important Gheluvelt Plateau, despite receiving advice from Haig and his own intelligence staff to do so. Added to this dissipation of effort, it rained heavily on the first afternoon and this downpour continued for several days. Combined with the prolonged preliminary bombardment and the already broken land drainage system, the rain turned the ground into a virtually impassable quagmire that greatly slowed the infantry as well as the forward movement of artillery and ammunition to keep pace with any gains made. It also blocked large areas to the movement of tanks. The bad weather also robbed the Royal Flying Corps (RFC) of the visibility it needed to identify enemy gun positions and concentrations of counter-attack troops (on which the German defence was reliant) for artillery targets. Fifth Army's total casualties for a month's fighting were 60,000 men; of the 22 divisions engaged, 14 had now been withdrawn to refit. By comparison the Germans had engaged with 23 divisions and had withdrawn 17 to refit, but they retained much of the Gheluvelt Plateau from where they were able to continue to bring observed fire down on to the British at its foot.

Following the slow and disappointing progress of the Fifth Army, Haig transferred authority for the offensive to General Sir Herbert Plumer (Second Army). There was no question in Haig's mind that the offensive should continue and that decisive results could still be achieved. He directed Plumer to mount a series of attacks on to the Gheluvelt Plateau, the capture of which would enable the Fifth Army to make progress on the northern flank. Such operations were very much in Plumer's style and his staff meticulously planned a step-by-step advance against limited objectives, each supported by a heavy concentration of overwhelming artillery power. Using twice the force over half the frontage attacked on 31 July, and over better ground and in fine weather, the British inflicted a series of powerful blows against the German defence, seizing the Menin Road Ridge (20 September), Polygon Wood (26 September) and Broodseinde Ridge (4 October) where the Germans lost heavily when they massed for a counter-attack at the very moment I Anzac Corps attacked them. The combination of concentrating crushing force at decisive points, the rapid consolidating of positions taken in anticipation of inevitable German counter-attacks, and the determination and fighting power of the troops involved, had achieved some useful tactical gains, albeit at the cost of heavy casualties. The good weather allowed the RFC a clear view of the enemy's depth and German counter-attacks, which had been so successful in the first phase, collapsed against the concentrated artillery fire put upon them. While they consistently altered their defensive tactics, the Germans appeared unable to prolong their attempts to contain the British advance. Mounting German casualties prompted the German Crown Prince Rupprecht, the northern-most army group commander, to begin preparations for a 'comprehensive withdrawal' that would have entailed giving up the channel ports – which, of course, would have fulfilled one of the major British objectives of the campaign at a stroke.[7]

After Broodseinde the weather broke and heavy rain again swept the battlefield. With the imminent onset of winter it became abundantly clear that Haig's hugely ambitious plans to break out of the Salient could not be realised that year. On 7 October 1917, both Plumer and Gough urged Haig to end the offensive. The British positions reached, however, were deeply unfavourable for defence and staying put was not a good option, so the choice was either to advance or to retire. The fall-back option was sensible in narrow military terms but would have meant abandoning territorial gains that had been made at huge cost, which was politically and psychologically very difficult. Continuing to fight on to secure the Passchendaele Ridge would allow a more defensible line to be established, on which the foundations could be laid for a resumption of the offensive in the spring.

So the battle continued into a third phase. Preparations were greatly hampered by the requirement to move men, guns and materiel across the wasteland between Ypres and the new front line. In persistent heavy rain and atrocious ground conditions, exhausted British Empire infantry attacked behind a ragged barrage towards Poelcappelle on 9 October, and then towards Passchendaele on 12 October, with many men drowning in the mud or dying of exposure. Further attacks were postponed until the weather improved and more artillery could be brought forward. The final stage of Third Ypres saw the Canadian Corps conduct four deliberate attacks that culminated in the capture of Passchendaele village on 10 November at a cost of nearly 12,500 men. This last stage of the battle was fought in conditions as depressing as it is possible to imagine the human spirit enduring prompting the noted war correspondent Philip Gibbs to write, 'As a man who knows something of the value of words, and

[7] Sheffield, *The Chief,* p. 243.



The Commonwealth War Cemetery at Tyne Cot.
© Barbara Taylor

who saw many of these battles scenes in Flanders, I say now that nothing that has been written is more than the pale image of the abomination of those battlefields, and that no pen or brush has yet achieved the picture of Armageddon in which so many of our men perished'.[8] Further minor attacks were made to secure local tactical objectives before the offensive was officially closed down on 20 November 1917.

Commentary

The Third Battle of Ypres was then and remains today a highly controversial battle, and the post-war reputations of both Haig and Gough have been greatly damaged by it. In his memoirs the British Prime Minister Lloyd George wrote, 'Passchendaele was indeed one of the greatest disasters of the war... No soldier of any intelligence now defends this senseless campaign.'[9] One of the most damaging consequences of the battle at the time was that the relationship between the government and the High Command was seriously set back. The loss of confidence, antipathy and mistrust became counter-productive to the British war effort and contributed to the initial disasters of March 1918.

The reasons why the British chose to fight in Flanders in 1917 have been described but it is important to note that Third Ypres was by no means an inevitable battle and alternative strategies existed at the time. The French favoured carrying out multiple sharp blows against the Germans on different parts of the Western Front as part of an overall process of wearing them down. The Allies could have waited for the American Expeditionary Force (AEF) to arrive in strength before launching a major offensive[10], or the main effort could have been moved to the Italian Front. Once an offensive in Flanders had been decided upon, planning for it was confused and a dangerous lack of clarity existed before the battle had even started at both the strategic level (between the Government and Commander-in-Chief in terms of the tolerance for casualties) and at the operational level (between Commander-in-Chief and his leading army commander for the first phase in terms of expectation). The lack of clarity between GHQ and Fifth Army might be called a comedy of errors but for the fact that the outcome was so tragic. The root of the problem was Haig's methods of command. Instead of giving Gough a clear intent, he made suggestions and gave advice but did not give an unambiguous directive. Gough was not subtle enough to understand the dual nature of the offensive and putting him in charge proved a bad and costly decision.

There is no doubt that the political and military delays in starting the offensive, combined with the effects of the poor weather, the ground and staunch German defence, greatly limited Haig's achievements. Whether his ambitious plans could ever have been achieved in the timescale that he had set himself is highly questionable. What is without doubt is that the partially seized objective, celebrated as a success, was the bare minimum tactical advantage that he had expected to achieve and fell far short of the original objectives of the offensive. Less than half of Passchendaele Ridge was in British hands. In not

[8] Philip Gibbs, *Now it Can be Told* (New York and London: Harper & Brothers, 1920) p. 474.

[9] David Lloyd George, *War Memoirs*, vol. 2 (London: Oldhams Press Limited, 1936) pp. 1333 &1325.

[10] This would have necessitated waiting until 1918 and was rejected by Haig; 'there's no time like the present', he urged Lord Derby (quoted by Sheffield, *The Chief,* p. 229).

closing down the offensive earlier, when it was clear that the aims could not be achieved, Haig had eaten into his manpower reserves, dealt a serious blow to his Army's morale and eroded their ability to withstand the German spring offensive in 1918. It is, however, worth noting that up until 9 October, British 'bite and hold' offensive tactics had been successful, albeit at considerable cost, and at that point there was some prospect that the British might just gain deeper, operational level objectives. The Australian Official History, often critical of the high command during the war, stated 'Let the student looking at the prospect as it appeared at noon on 4 October ask himself, 'In view of three step-by-step blows, what will be the result of three more in the next fortnight?"

In a strategic sense, despite the very heavy losses, Third Ypres did play a crucial role in reducing the possibility and potential of a powerful German attack against a weakened French army, an attack that might have won the war. The British offensive at Ypres pinned the German army to Flanders and cost them equally heavily in casualties; in attritional terms, arguably, the Germans more keenly felt these than the British. Haig is often criticized (and with some justification) for his wildly over optimistic view of the state of German army morale. Yet there is some evidence to support his assertion that during the final stages of the offensive the German army was close to cracking.[11] Cyril Falls, who fought at Passchendaele, noted that 'most of the hostile judgments [on the continuation of the battle] come from those ignorant of the atmosphere on the German side'.[12] For Germany, however, other strategic factors and imperatives were at work, not least the need to defeat the Western Allies before the AEF could play a major role. The release of forces from the Eastern Front following the collapse of Russia would largely compensate for the losses the German army had experienced in the West in 1917, and allow it to mount a series of major offensive operations on the Western Front in 1918 before the AEF could tip the strategic balance in favour of the Western Allies.

The Battlefield Today

The 'Aeroplane' Commonwealth War Graves Commission Cemetery located on the N332 between Ieper (Ypres) and Zonebeke provides a useful start point as it offers a panoramic view over the battlefield. From it, one can see: the Cloth Hall spire in Ypres town centre, 3.5 kilometres to the west; Passchendaele Ridge in the east; and the Gheluvelt Plateau to the south-east. Cement House cemetery located near Langemarck north of Ieper on the N313 offers an overview of the first days' fighting for Pilckem Ridge. For the middle period of fighting, the New Zealand Memorial on the s'Graventafel crossroads lies in the area captured during the successful fight for Broodseinde Ridge. Tyne Cot British cemetery and the 'Memorial to the Missing', positioned on the forward slope of Passchendaele Ridge, is a must for all visitors. Passchendaele New British cemetery on the top of the ridge affords an excellent view over the ground where the final stages of the battle were fought.

Jeremy Pughe-Morgan

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[11] For a detailed evaluation of Haig's intelligence about the German army and associated assessment of its morale and fighting power at Third Ypres, see Jim Beach, *Haig's Intelligence: GHQ and the German Army, 1916-1918* (Cambridge: Cambridge University Press, 2013) pp. 246-261.

[12] Cyril Falls, *The First World War* (London: Longmans, 1960; republished by Pen & Sword Military, 2014), p. 286.

Learning from Third Ypres

Although fought nearly a century ago, a study of the Third Battle of Ypres is instructive on a number of counts for many issues arising have contemporary relevance. First, 'Passchendaele' highlights the friction between a home government wishing to constrain mounting manpower losses and a military leadership that felt compelled to employ its forces at the maximum scale of effort in attempting to 'wear down' the enemy, believed to be far weaker than it actually was. Secondly, the battle showed, that despite the tactical and technical innovations and the integration of 'all arms' demonstrated in the successful storming of Vimy and Messines ridges in April and June 1917 respectively (both limited attacks), there was no easy, economic solution to be found in breaking into, let alone through, a deeply echeloned and well prepared German defence. For any given strategic aim, and the operational means (both in terms of personnel and materiel) available, the location, method and timing of attack mattered enormously, as did the concentration of force at the decisive point. The failures to achieve surprise after a long bombardment that signalled an imminent offensive, let alone to establish, initially at least, a clear main effort, are surely cases in point.

Thirdly, the battle confirmed yet again the enduring tension within the British high command between Haig and Gough, who stressed the need to think and plan in terms of ambitious penetration to attain deep objectives (what we might now describe as operational level manoeuvre), and subordinate commanders such as Plumer (and Rawlinson in other battles) who favoured more modest 'bite and hold' tactics, in which more limited, closer objectives were set and achieved. Inherent in this latter approach was the concept of defeating the inevitable German counter-attacks from secured positions of advantage and not ones of exposed weakness. Fourthly, Clausewitzian chance intervened on the German side with the onset of heavy rain shortly after the battle commenced on 31 July 1917, which led to the infamous mud that bogged down the British offensive in a multitude of ways: not only impeding the advance of attacking troops but also seriously impeding their resupply, artillery support and casualty evacuation. It also meant that the tanks were largely ineffective. The battle provides a pertinent reminder that terrain and meteorology still matter enormously in warfare. Finally, given all these factors, Third Ypres showed that when up against a determined, experienced and skilled opponent, no amount of bold, heroic leadership and action at the tactical level (which was demonstrated in countless engagements) could easily compensate for failings in higher command, whether in the planning or execution of the operation.

Unsurprisingly, therefore, Third Ypres, and in a similar manner to the battle of the Somme, remains hotly disputed by military historians. Some, such as Tim Travers, contend that the battle was 'flawed from the very beginning';[13] while others see it more in terms of missed opportunities. Robin Prior and Trevor Wilson, who perhaps have written the definitive modern study, describe the campaign as a 'predominantly futile episode of the First World War'. Furthermore, in their eyes, the 'manpower of the British army had been much diminished, and its morale severely damaged, so as to wrest from the enemy a meagre stretch of territory which was voluntarily given up in a few days in response to the German spring offensive in 1918'.[14] Yet, as Cyril Falls inferred, the Germans were shaken very hard at the time. Hence the battle of Third Ypres remains highly controversial in both aim and achievement. While it remains difficult today to comprehend the enormous sacrifice involved, we should not only honour that, but also attempt to learn from this battle at all levels.

Mungo Melvin

[13] Tim Travers, *How the War was Won: Command and Technology in the British Army on the Western Front, 1917-1918* (London: Pen & Sword Military Classics, 2005) p.1.

[14] Robin Prior and Trevor Wilson, *Passchendaele: The Untold Story,* 2nd ed., (New Haven and London: Yale Nota Bene, 2002) p. xv.

17. The Battle of la Malmaison
(27 – 25 October August 1917)

Description	French	German
Commanders-in-Chief	General Louis Franchet d'Espèrey – Northern Army Group General Paul Maistre – Sixth French Army	Imperial Crown Prince Wilhelm of Prussia – Army Group German Crown Prince General Max von Boehn – Seventh German Army
Principal Forces Engaged	XIV, XXI and XI Army Corps, four infantry divisions each; and XXXIX Army Corps with one division involved in the assault, a total of 13 infantry divisions (seven in the first echelon, with six in the second). 1779 guns including: • 768 field guns of 75 mm; • 656 heavy guns from 95 to 155 mm, including 420 howitzers and 40 new GPF (high power Filloux) guns; • 355 heavy guns up to 500 mm, including 270 mm new ALGP (high power heavy artillery) guns and four new 400 mm railway guns; 732 trench mortars from 58 to 240 mm. 63 Schneider and Saint-Chamond tanks plus four TSF and one replacement tanks. 300 fighter and artillery observation aircraft; several dozen observation balloons.	VIII Reserve Corps and Lifeguard Corps, equivalent of 8 infantry divisions involved in the defensive fighting. 586 guns including: • 324 field guns; • 228 heavy guns from 90 to 170 mm, including 132 howitzers; • 34 heavy guns up to 300 mm; 384 trench mortars (estimated) from 75,8 to 250 mm. 168 fighters and artillery observation aircraft (more than 200 at the end of the battle); several dozen observation balloons.
Context	The failure of the Nivelle offensive of April 1917, in which great hopes had been placed, contributed to the crisis of the mutinies. The offensive of la Malmaison was the last of three aimed at restoring the confidence of the French army, of public opinion and the Allies. It marked a turning point in the conduct of operations. The struggle proved long: the attrition of the enemy and of his reserves had to be obtained before trying again to launch great breakthrough offensives. There was no question of undertaking major operations before the French army had adequate equipment and the Americans arrived in numbers.	Despite its earlier defensive success on the Chemin des Dames, the German army was in a difficult situation, being sorely tested by the British offensive in Flanders. In the East, not-withstanding the victory over the Russians at Riga (1-5 September 1917), the forces made available by this success were sent to the Italian front, where the Austrians were in trouble. In the West, the Germans remained on the defensive. Having regained a number of observation posts on the Chemin des Dames during the summer, they did not wish to abandon this position, the pocession of which had many advantages for launching future operations.

Description	French	German
Casualties	Total of 14,873 men, including: • 2563 killed. • 10,824 injured (of which 1108 gassed). • 1486 missing.	Total of 49,741 men, including: • 8000 killed. • 30,000 injured (estimated). • 11,741 prisoners. Weapons lost: 200 guns, 222 trench mortars and 720 machine-guns.
Consequences	The victory by the Sixth French Army on the highly symbolic place of the Chemin des Dames restored confidence in the French high command. The latter again played a key role in the Allied coalition. The battlefield success confirmed the viability of the new French approach to operations, which excluded mounting offensives at any cost – despite strong political pressure in favour of such a course of action.	For General Ludendorff, the defensive failure suffered at la Malmaison was an unpleasant surprise, leading him to regret not having evacuated the Chemin des Dames earlier. However, this event seemed of secondary importance in comparison with the British Flanders offensive, and with operations on the Eastern Front and Italy. The loss of the Chemin des Dames handicapped the Germans during their great spring offensives of 1918.

Introduction

La Malmaison was the third and most formidable of a series of three battles in the second half of 1917 designed to regain the confidence of the French army and of a nation badly shaken by the disappointing results of the Nivelle offensive. The operation was characterized by the immense scale of the resources used to achieve strictly limited objectives: on a front of twelve kilometres, thirteen French divisions attacked German positions west of the Chemin des Dames. Aiming to seize objectives of only five kilometres in depth, the French attack was carefully prepared and enjoyed unrivalled fire support: 1779 artillery pieces, from 75 to 500 mm calibre, fired roughly 6 tonnes of shells per metre of the front during the preliminary phases.[1] At la Malmaison, the volume of artillery was such that the number of gunners exceeded by one-third that of the infantry (90,000 to 60,000 men).[2]

In common with the two previous limited offensives,[3] la Malmaison appears more similar in design to earlier operations than those of 1918 with their tank attacks often conducted without artillery preparation. Ultimately, it was mainly the change of the balance between objectives sought and the means applied that distinguish it from the Nivelle offensive. Given the resources then available to the French army, only an offensive with limited objectives, reduced attack frontage and increased density of fire support could guarantee success.

The limited offensive of la Malmaison constituted a turning point in the conduct of operations. According to his Directive No. 1 (19 May 1917), General Philippe Pétain, the French army's newly appointed commander-in-chief, considered that at this stage of the war an offensive operation could only succeed in its initial phase, whatever the means employed. The effect of surprise being short, it seemed futile to him to try to extend these attacks unrealistically by attempting to break through the entire depth of the enemy's position and to exploit: one then inevitably encountered the reserves and the losses of the attacker would exceed those of the defender. This concept of a strictly limited battle reflected the hard-won lesson of culmination.

Design and Preparation (late June – early October 1917)

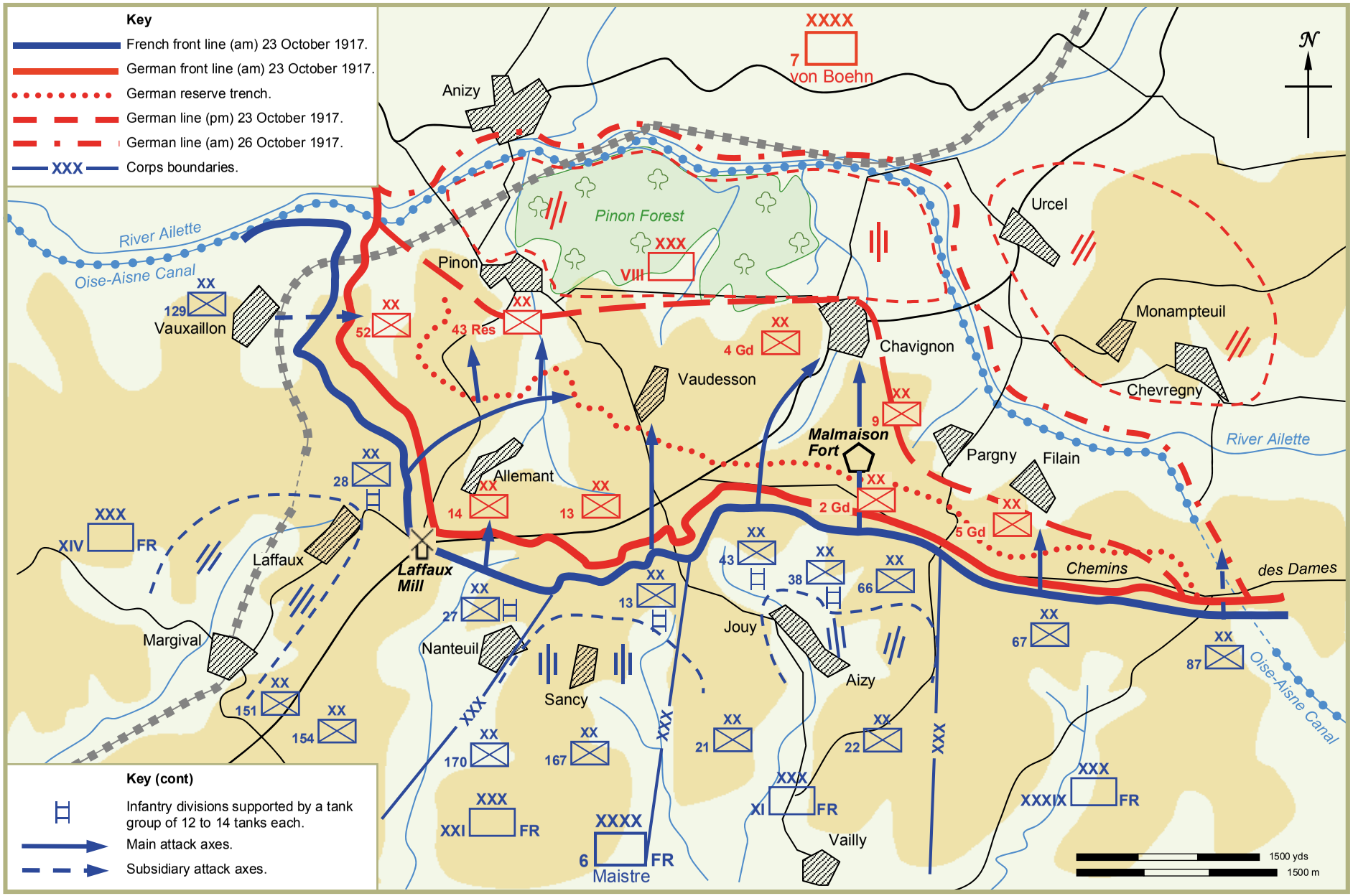
In addition to the relatively considerable resources allocated to it, the battle stands out through its innovation and the adoption of lessons learned from previous operations. Artillery preparation was reduced to four days to limit the time available for the deployment of enemy reserves.[4] During this period, German positions were bombarded with gas projectiles, including phosgene, a practice that was common by then. The massive use of chemical weapons with an emphasis on the neutralisation of enemy batteries, however, was new.

[1] By comparison, 0.9 tonnes/metre of front for the fire preparation of the battle of the Somme. The Nivelle offensive, unleashed on a front almost four times wider than la Malmaison, with objectives at a depth of 14 kilometres had been supported by 3691 pieces, firing less than 2 tonnes/metre.

[2] It has been described in French as an 'antibataille': see General Fernand Gambiez et Colonel Maurice Suire, *Histoire de la Première Guerre Mondiale*, tome. 2, *Grandeur et Servitude d'une Victoire* (Paris: Fayard, 1968), p. 44.

[3] It was preceded by the battle of the Forest of Outhulst on 31 July and by an attack at Verdun on 20 August 1917.

[4] Five days had been planned for the preparation of Nivelle's offensive but it lasted ten days.



Map 17.1 – The Battle of la Malmaison, 17-25 October 1917

Infantry supported by tanks, a tactic already employed in April and May 1917, was also planned. But this time the machines would be distributed among the various units that they would support, and would not be visible to the enemy before their unmasking. The preparation of the offensive, however, created some problems similar to those encountered in previous operations, not least the time taken to stockpile sufficient artillery ammunition. In one area alone, for example, dumping 80,000 tonnes required 32 days.

Thorough preparation prior to the battle included the training of the French infantry in the use of light machine guns and the recently introduced grenade launcher, as well as in tank tactics,[5] whilst taking into account developments in the enemy's defensive technique. The Germans, having studied carefully operations of the previous months, both in Flanders and at Verdun, increasingly based their defence on mobile units held ready in shell craters – where they were more difficult to detect than in the trenches. In order to be able to take full advantage of lessons learned at Verdun, the French high command delayed the offensive from late September to 21 October 1917.[6]

Execution (17-25 October 1917)

Through its various phases and by its limited territorial gains, the execution of the offensive is seemingly reminiscent of the Nivelle offensive and previous operations. However, it is differentiated by its much better manner, with German losses three times higher than the French, and in the way in which the Germans themselves were caught unawares.

Artillery Preparation (17-22 October 1917)

While the Germans had expected a limited offensive in the area of la Malmaison, and were well informed about the start time (0530 hours), they failed to imagine it would be launched on such a scale. They could not conceive of such a concentration of artillery resources on such a narrow front. Sure of themselves, they decided to remain in place despite the relatively precarious nature of their positions. Their rationale was twofold. First, they were confident of the defensive value of five divisions dug in on the ridges and of the three counter-attack divisions positioned behind these. Secondly, they wished to deny to the French observation posts overlooking the valley of the Aisne. So they decided against pulling back, a potential course of action feared by the French, following their bad experiences of April-May 1917.

The Germans were surprised by the violence of the artillery preparation, which also hindered the French attack. Due to bad weather, combined with the mass use of poison gas, an opaque and persistent fog prevented aircraft from carrying out observation missions for the artillery. In consequence it became necessary to extend the preparatory fire period, bringing with it the attendant risk of giving the enemy sufficient time to deploy three further reserve divisions located near Laon. Clear spells of weather, notably on 21 October, however, facilitated artillery fire directed through airborne observation. This opportunity allowed the French to limit the extension to their preparatory phase to only two days, which gave the Germans insufficient time to react.

The artillery preparation paralysed the German defenders.[7] While few reinforcements could reach the German lines, no unit could fall back south of the Ailette. Deprived of resupply, exhausted by the need to wear their gas masks for long periods, the Germans were forced to form their main defence on their second line, which further reduced depth in the key sector of the fort of la Malmaison. The cellars, which had provided safe shelter during April's offensive, could not resist the impact of 400 mm shells. The vaults collapsed, allowing poison gas to seep through the breaches. The rupture of the liaison network between the infantry and artillery further decreased the responsiveness of the German divisions. Furthermore, a lack of visibility and the activity of the French fighter planes severely reduced aerial observation.

The Attack (23-25 October 1917)

Despite the hazards that the French encountered, the artillery preparation considerably aided the infantry assault, which was brought forward to 0515 hours to fool the Germans. In some areas, however, it was less helpful, with shell-holes hindering the progress of the tanks.

In April-May 1917, very great numbers of casualties had resulted from isolated infantrymen, who had not been able to make use of light machine guns and grenade launchers, being mowed down by German machine guns. Thanks to the training that followed, they managed this time round to attack the enemy machine-gun nests by themselves, effectively integrating the effects of their support weapons.

[5] 14 infantry battalions undertook an extensive training of five to seven days with tank companies in the main tank camp of Champlieu.

[6] See Chapter 14, The Second Battle of the Aisne: The Nivelle Offensive.

[7] Its effects were improved by the extensive use of machine gun barrages, a British innovation.

Destroyed interior of the Fort Malmaison in the Chemin des Dames, 27 October 1917. ©IWM Q78917

A pause in the battle observed on the first objective not only allowed the French to realign their plan, but also forced the Germans into mistaking the French intentions. Believing the attack had ended, they prematurely pushed forward their counter-attack units. These were then subjected to artillery fire and the creeping barrage of the second phase of the French offensive. Among the 63 tanks committed, 21 managed to break through the first German position, providing key support to the French infantry, whose morale was boosted. The French attacking divisions achieved their initial objectives by 0900 hours. As they had been well chosen, their seizure quickly created the desired effect: the Germans abandoned the ground located immediately below the fort of la Malmaison. As a result, the French reached their second line of objectives for the offensive, at a distance of two kilometres, by that evening. On the night of 25-26th October, the enemy completely evacuated the southern bank of the Ailette in the area of the battle.

General Maistre wished to continue the offensive and had given orders to this effect on the 25th. Pétain, however, opposed any prolongation of the battle. He feared that the boost to morale created through success would be weakened by failure, knowing that an extension of the operation would have entailed fighting over significantly more difficult terrain, including crossing a river surrounded by marsh. As he had expected, the new French positions made the situation of the Germans very difficult, forcing their decision to evacuate the Chemin des Dames on 31 October 1917.

Commentary

The refusal of the French High Command to pursue overly ambitious and unrealistic objectives distinguished the battle of la Malmaison from previous offensives. Superficially similar to major previous offensives, the French operation was characterised through its attention to minute detail and the realism and thoroughness of its preparation, heralding the operations of 1918. The successful offensive allowed the French to regain the confidence of their army, nation and Allies. It did much to give France back the lead in land operations, until a unified command was entrusted to General Foch in March-April 1918. While intelligence work had been poor during the offensive of April 1917, this time it was skilfully conducted. General Pétain had managed to re-establish the information section, weakened under the pressure of political power when Nivelle had replaced Joffre.

Despite many pressures to launch more decisive operations, following the spectacular German successes of Riga (1-5 September) and Caporetto (24 October – 19 November 1917), Pétain kept on course. Opposed to mounting offensives at any cost, he also resolutely opposed defensive action at all costs. With the redeployment of

German divisions from Russia, a number of generals and politicians had recommended the latter course. Instead of adopting this rigid approach, he advocated fighting the main battle on the second position.[8] In May 1918, Sixth Army, by this time under the command of General Duchêne, unwisely ignored this direction. Following a hurricane bombardment, the Germans swiftly penetrated the Allied forward defence on the Chemin des Dames.[9] The need for the attackers to secure this dominant terrain objective before exploiting south, however, limited the results of the German offensive that could have had fatal consequences had they been able to retain it in October 1917.

Subsequent French operations then took a very different form from that of la Malmaison. Retaining the spirit that had underpinned it, however, they benefitted from the lessons learned concerning the neutralisation and disruption capabilities of the artillery, and the combined use of infantry and tanks to seize the first position of the enemy.[10]

The Battlefield Today

The most remarkable places of the battlefield today are the fort of la Malmaison and Laffaux mill. Located west of the Chemin des Dames, the fort of la Malmaison was built between 1878 and 1882 on a spur with wide views over the valley of the Ailette. This advantageous position made it one of the key objectives of the offensive. The ruins of the fort, already damaged by new torpedo tests in 1886, gives one a good feel for the intensity of the fighting which took place here. Unfortunately, vegetation limits views. The best panoramas are available from the car park at the fort's entrance, or along the road that leads further north. A monument near the fort commemorates the Moroccan Colonial Infantry Regiment and inscriptions of the Zouaves pay homage to the fallen soldiers of these North African formations.

Recaptured from the Germans on 5 May 1917, the Laffaux Mill is 4 kilometres from the western end of the Chemin des Dames, situated along the Soissons-Laon road at the tip of the angle formed by the front here. From the Mill, the view extends to the forest of Saint-Gobain and to the fort of la Malmaison situated 6 kilometres East-North-East, as well as towards the valley of the Aisne to the South. By attacking in this key sector, the French XIV Corps threatened the German positions further to the East, forcing them to withdraw to the North. The Laffaux Mill area is now merged with the Mount of Crapouillots, the name taken from the monument erected on this site to the glory of 12,000 trench mortarmen who fell on all fronts during the Great War. Amongst the numerousmonuments marking the fighting in 1917, only one concerns the Battle of la Malmaison: the memorial of the elite machine-unner Frédéric Taillefert. monuments marking the fighting in 1917, only one concerns the Battle of la Malmaison: the memorial of the elite machine-gunner Frédéric Taillefert.

Christophe Gue

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[8] As set out in Directive No. 4, 20 December 1917.

[9] See Chapter 22.

[10] The tenets of this new and evolving approach of operations were spread through several regulations. The most famous of those devoted to offensive are the *Instruction sur l'action offensive des grandes unités dans la bataille* (31 October 1917) and the Directive N°5 (12 July 1918).

18. The Battle of Cambrai
(20 November – 6 December 1917)

Description	British Empire	German
Commanders-in-Chief	General Sir Julian Byng	General of Cavalry Georg von der Marwitz
Principal Forces Engaged (as at 20 November 1917)	**Part of British Third Army** IV Corps: 36th, 62nd, 51st, 56th Divisions III Corps: 6th, 12th, 20th, 29th Divisions Cavalry Corps: 1st, 2nd, 3rd, 4th, 5th Cavalry Divisions	**Part of German Second Army** Group Caudry (XIII Corps): 9th Reserve, 20th Landwehr, 54th, 107th Divisions
Context	The opportunity to employ tanks en masse for the first time on ground of HQ Tank Corps' own choosing.	The Cambrai sector was considered a quiet one and used for divisions to recover from the fighting in Flanders.
Casualties	44,207 killed, wounded and missing	41,000 approx killed, wounded and missing
Consequences	Although the spectacular success of the opening day could not be maintained, Cambrai provided a blueprint for the combined arms warfare of the closing months on the Western Front.	Overcoming their initial shock and surprise, the Germans not only demonstrated their ability to reinforce quickly, but also mounted a highly successful counter-attack which bore the hallmarks of their 1918 offensives.

Introduction

The second half of 1917 on the Western Front was dominated by the British offensive in Flanders, what was to be known as the Third Battle of Ypres. It became synonymous with the mud of Passchendaele, caused by the artillery's destruction of the delicate drainage system and an unusual amount of rain. The result was suffering and frustration, not least for the Tank Corps. Many of its tanks failed in their role of infantry support because they became bogged, and had to be abandoned. As a result, the reputation of the Corps suffered. Consequently, Lieutenant Colonel J. F. C. Fuller, Chief of Staff at the Tank Corps HQ and later military theorist and historian, began to look for ways in which the tank could be employed more effectively.

Fuller came up with the idea of a tank 'raid'. His preferred scene of action was the rolling chalklands of Picardy to the south of Cambrai. Not only was the terrain much more suitable for armour than Flanders, but it was also a quiet sector, with no significant active operations during the past few months, so much so that the Germans regarded it as a 'rest area' for divisions mauled in the fighting in front of Ypres. Indeed, they called it the 'Flanders Sanatorium'. Fuller's final plan envisaged an operation of no more than 48 hours, using 200 tanks, supported by aircraft, to destroy as many guns as possible between Banteux and Ribécourt. He submitted his proposal to HQ Third Army, since the Cambrai sector was in its area of operations.

The Plan

In parallel to Fuller, Brigadier General Owen Tudor, 9th (Scottish) Division's artillery commander, developed another idea. Its basis was the recent developments in the science of artillery, which enabled guns to engage a target without first pre-registering on it and thus sacrificing surprise. He saw the principal role of the tanks as crushing the barbed wire entanglements in front of

The Cambrai Battlefield, as seen from the British Start Line © Phillipe Gorczysnki MBE

the German trenches and wanted to mount an operation combining these two capabilities. General Sir Julian Byng, commanding Third Army, now drew up a plan based on both Fuller's and Tudor's concepts of operations, but more ambitious in scope than Fuller's original idea. Haig agreed to it in principle in mid-October and then added refinements.

In its final form, Operation GY, as it was codenamed, aimed to break through the German defences, capture crossings over the St Quentin Canal at Masnières and Marcoing, and penetrate the German defences beyond. The Cavalry would then pass through to seize crossings over the River Sensée and isolate Cambrai. The final phase would see Cambrai captured and the now trapped German divisions destroyed. The initial assault would be on a frontage of some six miles (10 kilometres) and carried out by six divisions of infantry, accompanied by nine tank battalions. In all, 476 tanks were made available, 378 of them 'fighting' Mark IVs. Over 1,000 guns supported them and the infantry, ranging from 13-pdr field guns to 15-inch howitzers. While the heavier guns were employed on counter-battery work, the others would fire a creeping barrage from H-hour. Twenty-four RFC squadrons were also deployed. Their roles were reconnaissance, artillery fire control, close air support, bombing (both night and day), and combat air patrols.[1]

The attack was fixed for 20 November 1917. The previous fortnight involved deploying the tanks from other parts of the British front, which was done by rail, and training in infantry-tank co-operation. Secrecy was the watchword and the final deployments were done by night.

The Ground and the German Defences

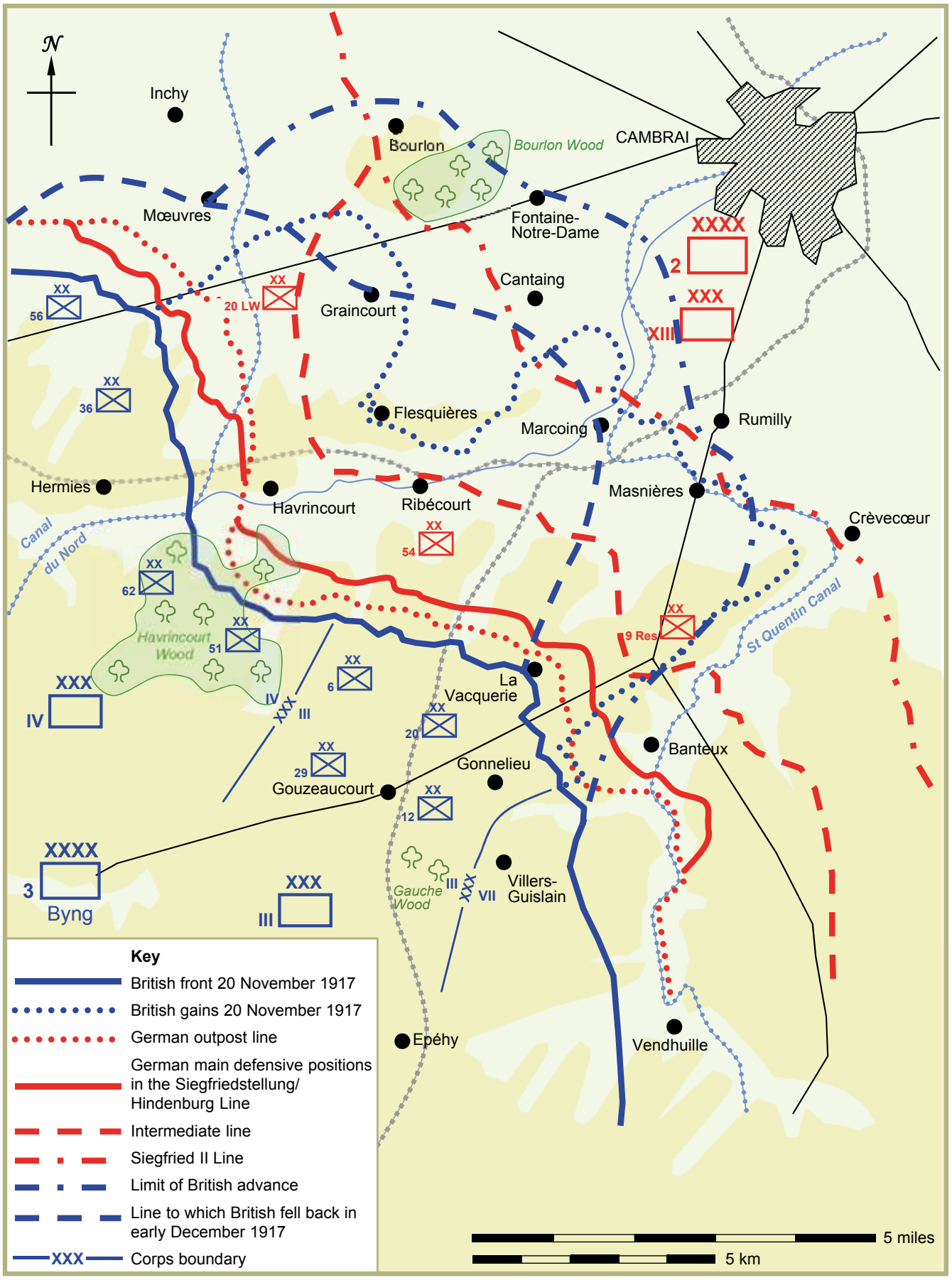
The area over which the attack would take place was bound by the St Quentin Canal in the east. This turned west and then north to Cambrai. On the western flank there was the Canal du Nord. The terrain was gently rolling and dotted with small villages. The two dominant features were Bourlon Wood to the west of Cambrai and Flesquières Ridge, which commanded the centre of the sector.

The German defences were organised in three belts. The most forward, known as the Siegfried I line, which itself had three lines of defences. Behind this lay the Intermediate Line, and finally Siegfried II. They incorporated part of the so-called Hindenburg defences, but were not as well advanced as in other sectors. Siegfried I was also on a forward slope. As for the defenders, the three divisions in line had little idea of what was about to hit them, while 107th Division only began to arrive from the Eastern Front on 19 November.

The Battle

Dawn on 20 November 1917 brought fog, an added advantage to the attackers. At 0620 hours the barrage opened and the tanks began to move forward. The Germans were stunned. Shock and surprise were complete as Siegfried I was quickly overcome. As the fog began to clear, progress on the flanks continued to be good, with the Intermediate Line also being captured. In the centre, however, Flesquières Ridge, which was part of the Intermediate Line, proved a problem. As the tanks climbed the slope of the ridge they came under heavy fire from German gun crews trained to engage tanks and suffered heavily. Infantry from 51st Highland Division did manage to get into Flesquières village, but German

[1] See also Jonathan Bailey's description of Cambrai as the first 'modern' battle at Chapter 30.



Map 18.1 – The Battle of Cambrai, 20 November – 6 December 1917

counter-attacks drove them out. This left 62nd and 6th Division, 51st Division's neighbours, with exposed flanks and inhibited their further advance. Poor communications and hesitation also held back the Cavalry, with one exception. In the east, the tanks managed to secure the bridge at Masnières before it could be demolished. A tank attempted to cross, but ended in the canal, along with the bridge. A squadron of the Canadian Fort Garry Horse succeeded in finding a crossing place close by, got to the far bank and advanced as far as the German gun lines. Heavy casualties eventually forced them to withdraw, but it was the high point in a day that had seen advances of up to five miles, unheard of on the Western Front since the early weeks of the war. When the news reached Britain, the church bells were rung in celebration, the first time they had been heard since the outbreak of war. It was premature.

True, the Germans did evacuate Flesquières Ridge on the night 20/21 November, but 159 tanks had become casualties in the first day of battle and the surviving crews were exhausted. Even so, orders for 21 November stated that III Corps in the east was to tidy up the situation around Masnières so that the Cavalry could have another chance to exploit, while IV Corps was to capture Bourlon. The Germans, though, were beginning to rapidly reinforce, both on the ground and in the air. In consequence, III Corps made little progress in the face of fierce counter-attacks. Troops of IV Corps managed to seize Fontaine-Notre-Dame and penetrate Bourlon Wood, but were driven out by the Germans the following day. Third Army's focus now lay entirely on Bourlon and its wood. During desperate fighting the wood was eventually taken, but the Germans clung on to the village. Hence, on 28 November Byng decided to close the attack down and the surviving tanks began to be withdrawn. It left him with a vulnerable salient.

Meanwhile, the Germans had continued to reinforce and on 30 November they struck powerfully. An assault from Bourlon village was held, but a second in the Cantaing area drove the British back. Then, on the following day the Germans struck the eastern face of the salient. The steep west bank of the St Quentin Canal hid them from view, since the defenders were in reverse slope positions, and most of the heavy artillery supporting III Corps and been switched to support IV Corps. Also, the Germans were using new infiltration tactics, developed on the Eastern Front, in which the forward troops bypassed strongpoints so as to maintain momentum and spread confusion. During the next few days the British lost almost all the ground they had taken before von der Marwitz halted his attacks.

Commentary

It can be said that Cambrai marked the coming of age of the tank, but it was still slow, mechanically unreliable and exhausting for the crews to fight in. At the same time, the battle reflected a significant advance in the handling of artillery firepower. Cambrai was most significant, however, in acting as a portent of the nature of warfare in 1918. Both sides had found a means of overcoming the stagnation of trench warfare and both would employ these means, which had much to do with combined arms, in an attempt to win decisive victory.

The Battlefield Today

Cambrai is unusual as a Western Front battlefield in that the ground still looks much as it did in 1917. The villages, albeit slightly more spread, still appear as they were 100 years ago and Bourlon Wood looks as sinister as it ever did. Standing on Flesquières Ridge, one can see almost all the ground that was fought over on 20 November and within the village is housed one of the tanks, Deborah of D Battalion Tank Corps, which was knocked out on the ridge that day. The ridge also has a small cemetery and a memorial, unveiled in 2007, to all who fought in the Cambrai area in 1917-18.

Charles Messenger

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19. Operation MICHAEL
(21 March – 5 April 1918)

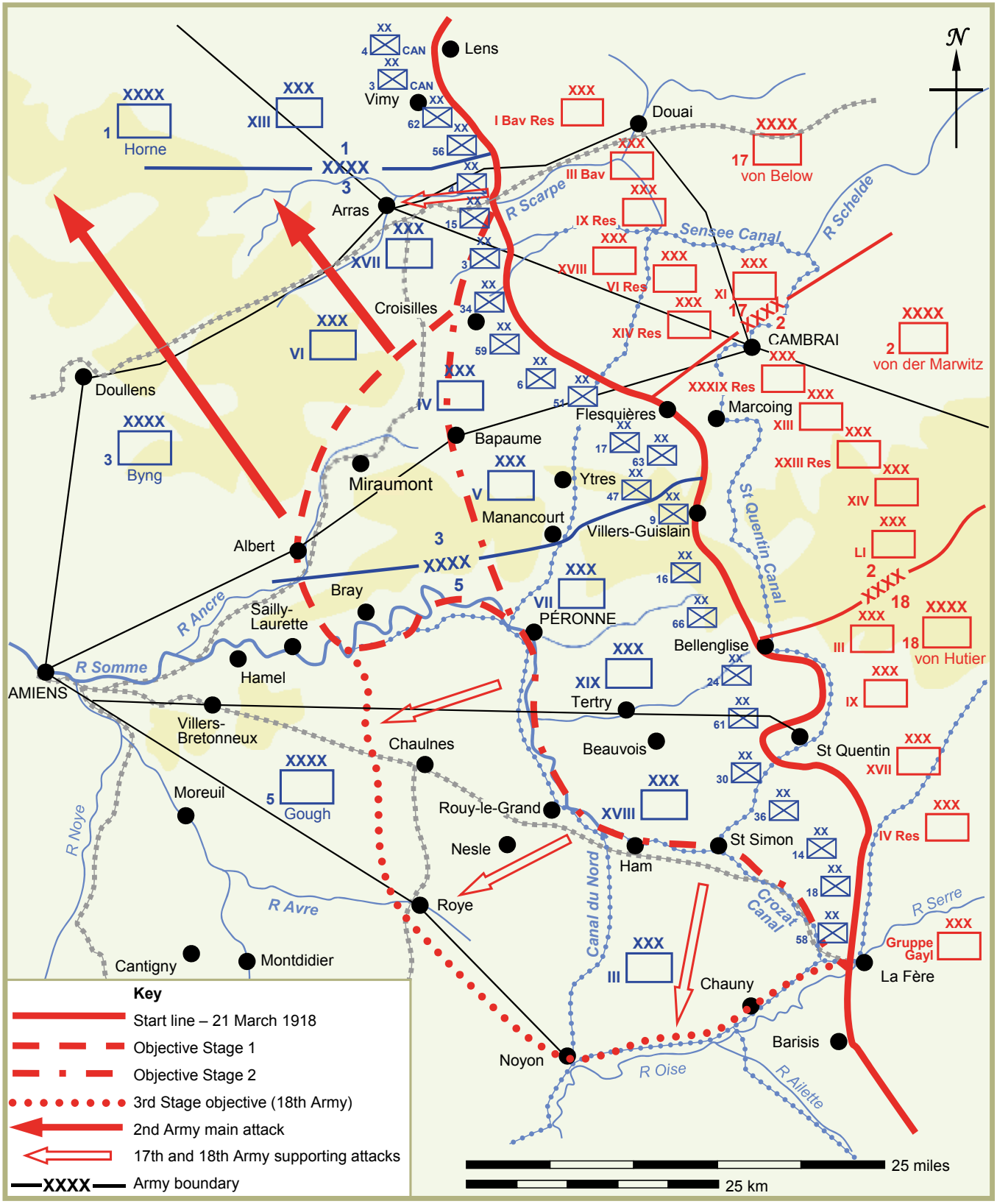
Description	British	German
Commanders-in-Chief	Field-Marshal Sir Douglas Haig	Field-Marshal Paul von Hindenburg General of Infantry Erich Ludendorff
Principal Forces Engaged	**British Expeditionary Force** Third Army – 14 Divisions, 1,120 Guns Fifth Army – 12 Divisions, 1,684 Guns	**Army Group Bavarian Crown Prince Rupprecht** Seventeenth Army – 18 Divisions, 2,236 Guns Second Army – 20 Divisions, 1,789 Guns **Army Group German Crown Prince** Eighteenth Army – 27 Divisions, 2,448 Guns
Context	The Fifth Army on the right wing of the BEF collapsed under the initial assault and contact between the French and British was broken. Third Army fought on stubbornly. Amiens held out; French forces from the south eventually closed the gap.	Despite phenomenal first day advances, the German operational plan fell apart after the first day. Continual shifting back and forth by Ludendorff only made things worse. The Germans failed to take the critical rail centre at Amiens, the loss of which could have been fatal to the British.
Casualties	177,739 British 77,000 French 77 American	239,800
Consequences	Despite holding out against the German assault, the BEF almost immediately had to face another massive assault on its left wing in the form of Operation GEORGETTE.	After 16 days of fighting and irreplaceable casualties, the Germans did not accomplish a single operational objective and were left holding a huge and vulnerable salient.

Introduction

Known as the Saint-Quentin Offensive, the Second Battle of the Somme, the Second Battle of Picardy by the French, and unofficially the Kaiserssschlacht by the Germans, Operation MICHAEL was the first of the five large-scale Ludendorff Offensives launched between March and July 1918. The German main effort was directed at the boundary between the French and British armies in Flanders, and the primary objective of the attack was to split the two allies. Once the British were cut off from the French, Ludendorff planned to follow-up by turning his forces north and rolling up the British from their right flank, culminating with the BEF's expulsion from the Continent. Once that was accomplished, the Germans believed, the French would collapse and sue for peace before fresh American forces could arrive in Europe in sufficient numbers to tip the strategic balance against Germany.

Planning and Deployment

By moving forces from the Eastern Front after Russia collapsed, Ludendorff deployed 67 divisions along a 46-mile (74 kilometres) front from La Fère in the south to Arras in the north. The attack force was commanded by three field armies: General of Infantry Fritz von Below's



Map 19.1 – Operation MICHAEL, 21 March – 5 April 1918: The Plan

Seventeenth Army in the north, General of Cavalry Georg von der Marwitz's Second Army in the centre, and General of Infantry Oskar von Hutier's Eighteenth Army in the south. Second Army, attacking almost due west, was designated the main effort. The Seventeenth Army on the right advanced to the northwest to prevent the British reinforcements intervening from the north. On the left the Eighteenth Army had the mission of advancing southwest to prevent the French from closing the gap and reinforcing the British.

On the Allied side of the line the British had a total of 33 divisions under General Sir Julian Byng's Third Army and General Sir Hubert Gough's Fifth Army on the far southern end of the British line. Despite the objections of BEF commander Field-Marshal Sir Douglas Haig, the British sector had been extended south only a few months earlier. The Fifth Army soldiers who moved into the former French positions found defensive works and trench lines in a poor state of repair and in some places totally nonexistent.

The Germans prepared for the attack by massing 6,608 artillery pieces along the line in great secrecy. Of that total, 2,598 were heavy or super-heavy guns. In the Eighteenth Army sector, the fire support planning was under the direction of Colonel Georg Bruchmüller, Germany's great artillery genius of the war. The British Third and Fifth Armies in the attack sector had 2,686 guns, only 976 of which were heavier than light field guns. Thus, the Germans started the battle with an artillery superiority ratio of 2.5:1.

The Battle

German artillery opened fire at 0440 hours on 21 March 1918. By that point in the war typical artillery preparations lasted days and even weeks.[1] Bruchmüller's 'Hurricane Bombardment' lasted only five hours, but it was still the greatest artillery bombardment in history to that time. The firing could be heard as far away as London. The Germans fired 3.2 million artillery and trench mortar rounds on this first day of their offensive alone.

At 0940 hours the preparatory fires lifted. The Germany infantry advanced, following closely behind a creeping barrage. Rather than the rigid linear advances so typical to that point in the war, the German Landser used infiltration tactics, moving in small elements by fire and manoeuvre, bypassing and isolating strong points. They were aided by heavy fog for most of that morning, which screened their movements and prolonged the effects of the artillery-delivered German gas. The initial results were spectacular by First World War standards. By 1400 hours the Germans had reached the Fifth Army's battle zone, and by the end of the day British II Corps and the 36th Division of XVIII Corps were fighting in the rear of their own battle zones. Fifth Army started to disintegrate under the onslaught.

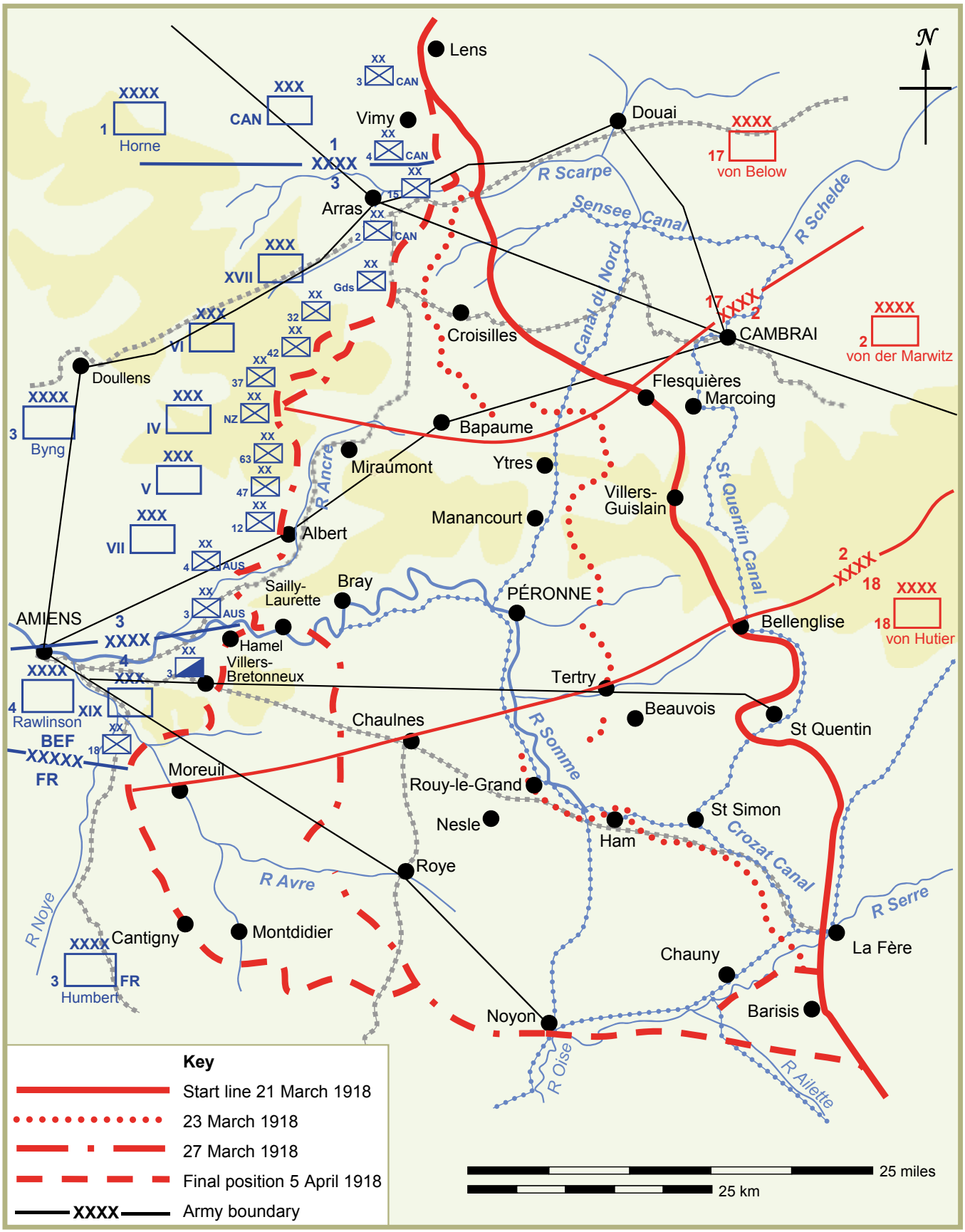
Haig's primary concern was the security of the Channel ports, the key nodes in the BEF's lines of communications. He therefore had placed almost all of his reserves behind his northern wing, assuming that the French would reinforce the British sector in the south. But French army commander General Henri Philippe Pétain believed the German attack was only a feint, with the main blow to fall in the Reims sector, followed by a German drive directly toward Paris. Despite prior inter-Allied agreements, Pétain did not commit the French reserves immediately.

Although the Germans achieved tremendous tactical successes on 21 March, their overall operational plan was starting to come apart by the end of the day. Eighteenth Army's operation was only a supporting attack, but it had made the most progress; by the end of the day it was the only one of the three German armies still advancing. Worse still, the Second and Seventeenth Armies had failed to accomplish their most important first-day objective of pinching out the Flesquières Salient on their inner adjacent wings. The elimination of that salient was the key to the Second Army's pivot to the north. Its elimination had been the first task designated in the MICHAEL operations order issued on 10 March. British V Corps was finally forced out of the Flesquierès Salient on 23 March.

From that point on Ludendorff made a series of critical errors. First, he tried to shift the overall main effort to the Eighteenth Army as a way to maintain momentum. But the main logistical support and most of the follow-on forces had been positioned behind the Second Army and could not be shifted quickly. The shift to the Eighteenth Army also changed the direction of the main effort to the southwest, where despite the widening gap between the British and the French, the Allies had more depth than in the north, and therefore more space to trade for time.

Although the German plan was falling apart, it was hard for the Allies to see that immediately. As the British operational situation continued to deteriorate, the BEF on 24 March started making plans to abandon the Fifth Army and fall back to the north. Haig that day also called for a meeting of the Supreme Allied War Council. Meeting at Doullens on 26 March, the Council appointed General Ferdinand Foch as the overall commander of both French

[1] There were exceptions, such as at Cambrai on 20 November 1917 – see Chapter 18.



Map 19.2 – Operation MICHAEL, 21 March – 5 April 1918: The Result

and British forces for the duration of the battle. For the first time in the war, the Allies had a unified command. Foch quickly recognized that in its current direction the German offensive would reach culmination before reaching any significant operational objective. Foch ordered Pétain to start sending French reinforcements slowly into the British sector.

On 28 March Ludendorff tried to restore the momentum in the north by launching the northern wing of the Seventeenth Army against Arras. When Operation MARS failed almost immediately, Ludendorff then tried to shift the main effort back to the Eighteenth Army on the other end of the German line. But Hutier was ordered to change his own direction of attack almost 90 degrees to the right to take Amiens. Despite another wrenching shift of supplies and follow-on forces behind the German lines, the Eighteenth Army began to encounter the French reinforcements sent by Foch. The Eighteenth Army never reached Amiens.

Ludendorff finally closed down Operation MICHAEL on 5 April 1918. In sixteen days the German army had taken more ground than had the Western Allies during the entire war to that point. Ludendorff's forces captured 1,200 square miles, compared to the 125 square miles the British had to show for three months of fighting on the Somme in 1916. Operation MICHAEL cost the British and the French 254,739 casualties and 1,100 guns. But their astonishing tactical success had cost the Germans 239,800 casualties. Unlike the Allies, the Germans could not replace those losses.

Commentary

Operation MICHAEL came very close to succeeding; the reasons for its failure lay almost entirely on the operational level. Right from the start Ludendorff violated the principle of unity of command. While Second and Seventeenth Armies were part of the army group of Bavarian Crown Prince Rupprecht, Eighteenth Army was subordinated to the army group commanded by German Crown Prince Wilhelm, thus placing two headquarters between the attacking field armies and Oberste Heeresleitung, the German Army High Command.

The Germans also failed to weight the main attack with sufficient artillery. Although the Second Army was the designated main effort, it had significantly fewer mortars

German supply column moving up near Étricourt-Manancourt, 24 March 1918. © Bundesarchiv Bild 104-0984A

and guns and even fewer heavy guns than either the Seventeenth or the Eighteenth Armies. The three armies also attacked on divergent axes (northwest, west, and southwest), which effectively dissipated rather than concentrated their combat power as they advanced. In the end, the Eighteenth Army penetrated almost 48 miles (77 kilometres). In the north the Seventeenth Army made the least progress, advancing only 17 miles (27 kilometres). The Second Army in the centre fared only slightly better.

Perhaps Ludendorff's greatest mistake was conducting a force-on-force battle, sending his forces directly against the British main strength. The Germans might have accomplished their overall objective by attacking instead the BEF's key vulnerability, its extremely fragile and overstressed logistics system. Amiens in particular was one of two key choke points in the British rail network and supply chain, through which everything coming in through the Channel ports had to move. There were very few alternate routes, and they had extremely limited capacities. The British themselves, well aware of these vulnerabilities, developed multiple contingency plans to withdraw to the north and possibly evacuate the Continent should they lose Amiens, and with it their entire southern logistics network.

The Germans apparently never recognized that they could almost completely strangle the British logistically by taking Amiens. Although they did reach to within ten miles of the city, Amiens was never a designated objective in the Operation MICHAEL plan, and Ludendorff issued orders to take it only on 26 March, almost as an afterthought. But then two days later he tried to shift back to the north with the abortive Operation MARS. The failure of Operation MICHAEL led almost immediately to the ill-conceived and poorly prepared Lys Offensive, Operation GEORGETTE during 9-29 April.

The Battlefield Today

Operation MICHAEL is an extensive battlefield. The landscape of rolling countryside and small rebuilt villages is still much as it was in March 1918. A good stand for the Fifth's Army's forward zone is Manchester Hill, 1.5 miles west of St. Quentin. The 1870s Fort Vendeuil, north of Le Fère on the Oise River, was a Fifth Army strong point that was gassed heavily on 21 March. The Flesquières Salient lies southwest of Cambrai on the A2/E19. The N319 south from Arras roughly parallels the Third Army's final line. There are 164 CWGC cemeteries in the zone of the first day's fighting, including the one at Vadencourt, which was in the original British battle zone. The memorial to Fifth Army's missing is near Pozières, and those of Third Army's are listed on the Arras Memorial. The CWGC cemetery north of Villers-Brettoneux overlooks the area of the final fighting in the north in early April.

David T. Zabecki

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20. Operation GEORGETTE
(9 – 29 April 1918)

Description	British	German
Commanders-in-Chief	Field-Marshal Sir Douglas Haig	Field-Marshal Paul von Hindenburg General of Infantry Erich Ludendorff
Principal Forces Engaged	**British Expeditionary Force** Second Army – 6 Divisions, ? Guns First Army – 6 Divisions, 511 Guns	**Army Group Bavarian Crown Prince Rupprecht** Fourth Army – 8 Divisions, 571 Guns Sixth Army – 28 Divisions, 1,686 Guns
Context	The First and Second Armies were pushed back. But fierce resistance on the southern shoulder at Givinchy and Festubert and in front of Hazebrouck bought the BEF sufficient time for French reinforcements to arrive in Flanders and tip the balance.	Despite overwhelming tactical superiority, the Germans once again failed to achieve any operational or strategic objectives, while expending irreplaceable resources. Once again Ludendorff failed to recognize the vulnerability of a key British rail centre; his abrupt and ill-considered shifts in the course of the battle contributed significantly to the German failure.
Casualties	82,040 British 30,000 French	86,000
Consequences	Having beaten off the first two of the Ludendorff Offensives, the BEF now had time to recover as the final three of the offensives were directed against the French sector to the south.	Still focusing on the overall strategic objective of knocking the BEF out of the war, Ludendorff conducted his final three offensives in the south as feints to draw French reinforcements out of Flanders. All three failed, and the Germans never launched Operation HAGEN, their final planned attack against the British.

Introduction

Also known as the Fourth Battle of Ypres, the Third Battle of Flanders, and the Lys Offensive, Operation GEORGETTE was the second of the five large-scale Ludendorff Offensives launched between March and July 1918. Despite achieving unprecedented tactical success, Operation MICHAEL, fought from 21 March to 5 April, failed to accomplish anything of operational significance, let alone achieve its strategic objective of forcing the BEF off the Continent before arriving fresh American forces would tip the balance irrevocably in the Allies' favour.

During Operation MICHAEL the Allies did suffer extensive casualties and equipment losses, and had lost far more ground than during any other battle of the war. The Allied coalition, however, still held together politically and militarily; U.S. troops would soon more than replace the French and British personnel losses. The Germans, on the other hand, could not make up their deficiencies in manpower and equipment; and now they had to hold and defend a huge salient that added 50 miles (80 kilometres) to their front lines. Despite having a robust rail network to their rear, the German logistical system was stretched to the point of breaking.

Planning and Deployment

Operation MICHAEL most probably was Germany's last chance to defeat the Western Allies militarily. But Ludendorff refused to relinquish the operational initiative by going over to the defensive. He also was convinced that as Operation MICHAEL had come so close to succeeding, he could still push the BEF into the Channel with one more hard thrust. Ludendorff wanted to follow Operation MICHAEL immediately with Operation GEORG, which had been planned and developed as a possible alternative to MICHAEL. But at the start of 1918 the Germans had only enough combat power for the full-scale version or one of those operations or the other, and much of that power had been expended during MICHAEL.

In late March 1918 when it became obvious that Operation MICHAEL would fail, *Oberste Heeresleitung* (OHL), the German Army High Command, reassessed the situation in the north. They came to the somewhat dubious conclusion that because of the gains made during MICHAEL it was no longer necessary to penetrate all the way to the Channel, as the original plan for GEORG required. They therefore down-scaled the original GEORG plan as Operation GEORGETTE, based on a sharp thrust below the British centre in the direction of Hazebrouck just south of Ypres. The Germans believed that would cut off the bulk of the British forces in the Ypres Salient and force a general withdrawal.

On 28 March, immediately after the failure of the Operation MARS supporting attack for Operation MICHAEL, Ludendorff ordered the army group of Bavarian Crown Prince Rupprecht to prepare to launch the GEORGETTE attack in eight to ten days. This second of the great Ludendorff Offensives pitted the German Fourth and Sixth Armies on the extreme north of the German line against General Sir Henry Horne's First Army south of the Lys River and General Sir Herbert Plumer's Second Army north of the river. The Germans massed thirty-six divisions against only twelve for the Allies, one of which was the rather shaky 2nd Portuguese Division in the centre of the British First Army's line near Neuve Chapelle.

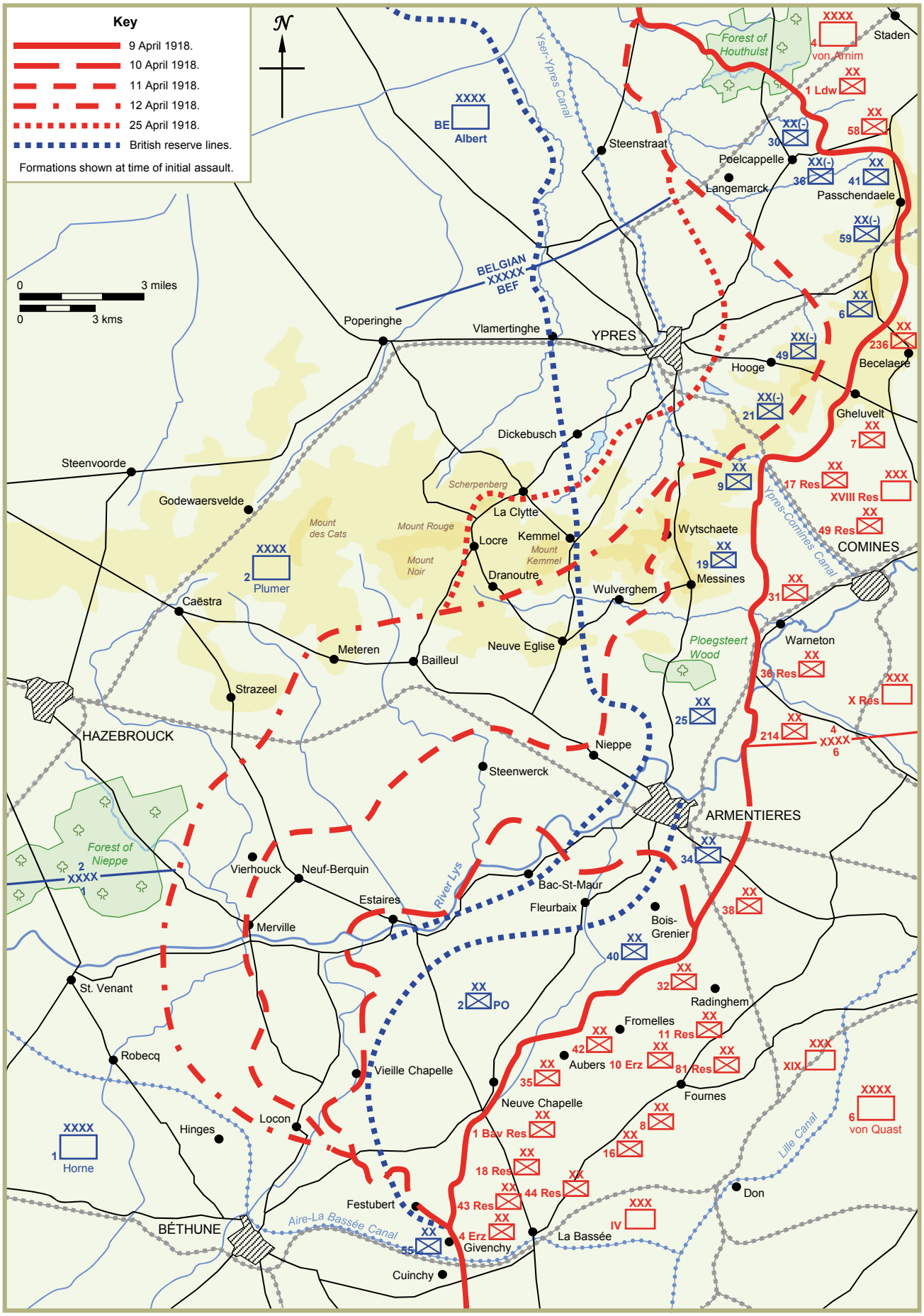
On the first day of the operation General of Infantry Ferdinand von Quast's Sixth Army made the main attack south of Armentières, driving straight for Hazebrouck. On the second day, General of Infantry Friedrich Bertram Sixt von Armin's Fourth Army launched a supporting attack north of Armentières to block the move of any British reinforcements. This time the Germans weighted their main attack with plentiful artillery. While Fourth Army fielded 522 guns, Sixth Army had 1,686 guns opposing the British First Army's 511 guns, representing a tube superiority ratio of 3.3:1. Ludendorff personally ordered Colonel Georg Bruchmüller to be re-assigned to the Sixth Army to take charge of the artillery.

The Battle

Sixth Army's artillery started firing at 0415 hours on 9 April 1918. The preparation fire lasted only four-and-a-half hours, with the Germans firing 1.4 million rounds that first day. At 0845 hours the German infantry jumped off, preceded by a creeping barrage. The initial tactical results again were impressive, as the German infantry advanced three miles (five kilometres) in the first few hours. The 2nd Portuguese Division in the centre of the British First Army's line virtually disintegrated, forcing Horne to pull his entire line back to prevent a gap. But once again, the Germans failed to achieve one of their key first day objectives. On the extreme left wing of the attack the Germans were held fast at Givinchy and Festubert by stubborn and gallant resistance from the British 55th Division.

On 10 April the German Fourth Army launched the supporting attack in the north, taking the village of Messines. Haig requested reinforcements from General Ferdinand Foch, whose overall authority at that point was somewhat ambiguous. On 26 March Foch had been appointed to coordinate British and French forces specifically for the MICHAEL battle. French army commander General Henri Pétain therefore (but unhelpfully from a British perspective) questioned his authority to order French reinforcements to the GEORGETTE sector.

By 11 April the British situation was desperate as the Germans closed to within a few miles of Hazebrouck. Haig that day issued his famous 'Backs to the Wall Order', "... with our backs to the wall and believing in the justice of our cause, each us must fight on to the end." But the tide was starting to turn, as the British 5th and 33rd Divisions arrived to reinforce the battle zone. Most importantly, the Australian 1st Division moved in to block the German forces at the Nieppe Forest directly in front of Hazebrouck. By this time (at the Beauvais conference on 3 April) Foch had been charged with the 'strategic direction of military operations' and authorised to co-ordinate the actions of the Allied armies on the Western Front. Now he was appointed 'generalissimo' or 'General in Chief'; none too soon he ordered Pétain to start moving French forces north immediately.



Map 20.1 – Operation GEORGETTE, 9-29 April 1918

On 12 April, meanwhile, Ludendorff committed the same fatal operational mistake he had made during Operation MICHAEL. With the Sixth Army only five miles from the critical rail centre at Hazebrouck, he shifted the main effort to Fourth Army, and the primary objective of Operation GEORGETTE became Mount Kemmel rather than Hazebrouck. In support, Sixth Army had to turn north, away from Hazebrouck, and toward Kemmel.

As the attack of the German Fourth Army gained momentum, Plumer was pushed back on his southern flank, suffering heavy losses. On 15 April he made the agonizing decision to pull his northern flank back from Passchendaele Ridge to Ypres and the Yser Canal, giving up ground the British had lost almost a quarter of a million casualties taking in 1917. Meanwhile, French reinforcements started to pour into Flanders and the German offensive lost momentum. On 25 April the Germans achieved their last major successes of the campaign, capturing Mount Kemmel, which at that point was held by French forces. Conducting one final attack on 29 April 1918 the Germans also captured the Scherpenberg heights to the north-west of Kemmelberg. But Operation GEORGETTE had reached culmination. Ludendorff terminated the offensive that day.

Commentary

Mount Kemmel was a fairly important piece of high ground, but it was it was not nearly as critical as Hazebrouck, the key British rail centre north of the Somme. Had Hazebrouck fallen, the entire British logistical network in the north would have collapsed. The British recognized this vulnerability only too clearly, but the Germans seemed oblivious to it, much as they had failed to understand the significance of Amiens during Operation MICHAEL. Once again Ludendorff had conducted a force-on-force battle, rather than attacking a key enemy vulnerability.

Since 21 March 1918 the Germans had achieved two huge tactical victories but at the cost of heavy and irreplaceable losses. Two thirds of the German army on the Western Front had been committed to the two offensives (Operations MICHAEL and GEORGETTE); Germany was now at the end of its manpower reserves. The Allies also suffered heavy losses. Fifty-three out of a total of sixty British divisions in France and Flanders had fought in one or both battles. Yet the Allies still had the advantage of the fresh U.S. units that were now arriving in France in a continuous stream.

Nonetheless, Ludendorff refused to relinquish the initiative. With too many French divisions in Flanders to attack the BEF again, Ludendorff launched his third major offensive on 27 May 1918. Operation BLÜCHER, fought from the Chemin des Dames to the Marne River, was intended as a massive feint that would pull the French out of Flanders.[1] From there, the Germans planned to follow-up with Operation HAGEN, which finally would defeat the BEF. BLÜCHER, however, also failed, largely because Foch recognized it for the feint it was.

The Battlefield Today

Most of the Operation GEORGETTE battlefield, from La Bassée in the south to Steenstrat in the north, overlaps the better-known ground of the three earlier battles of Ypres. There are more than 175 CWGC cemeteries with more than forty burials each in the area. From north to south key points and areas include from Passchendaele Ridge to the Yser Canal; Messines Ridge; Mount Kemmel; Hazebrouck; the Nieppe Forest; Armentières; and Givinchy and Festubert. A key British bunker stands on the D166, about ¼ mile outside of Festubert. The crossroads in front of Givinchy was known as 'Windy Corner', which is just east of the Guards Cemetery. The 55th Division Memorial is in the centre of the town. The Portuguese Cemetery is just to the north, at La Bombe. The French have an ossuary on the slope of Mount Kemmel, and a monument at the summit.

David T. Zabecki

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[1] **Described at Chapter 22.**

21. The First Tank vs. Tank Action in History

(Villers-Bretonneux, 24 April 1918)

Description	British Empire	German
Commanders-in-Chief	General Sir Henry Rawlinson	General Johannes Georg von der Marwitz
Principal Forces Engaged	**Fourth Army** Australian Corps: 5th Australian Division III Corps: 8th, 18th & 58th Divisions Tanks: 3 Mark IVs and 7 Whippets	**German Second Army** XIV Corps: 228th & 4th Guards Divisions[1] XI Corps: 77th Reserve & 208th Division Tanks: 14 A7Vs in three Groups
Context	At very heavy loss in personnel and territory, the BEF and the French army had held the first major German offensive of spring 1918 (Operation MICHAEL, 21 March to 5 April) around Villers-Bretonneux, just east of the critical communications centre and town of Amiens.	Part of a series of major German offensive operations aimed at defeating the British and French armies before the arrival in strength of the U.S. Army during 1918. A combination of meticulous artillery bombardments and infiltration tactics achieved tactical (and limited operational), but not strategic success.
Casualties	13093[2]	About 12002[3]
Consequences	A combination of defence in depth, artillery, tanks and a spirited Australian counter-attack holds the German attack but at heavy cost to III British Corps.	Final check of the first of the German 1918 offensives. Also foiled against the BEF in Flanders in April, the Germans now prepared to attack the French.

Introduction

At about 1020 hours on 24 April 1918 the left hand 6-pounder gunner, Private Carter, of Mark IV tank number 4066, his eyes swollen by gas and working single handed, scored three hits on 'Nixe', a German A7V tank, killing and wounding several members of the crew and forcing the rest to evacuate their vehicle. The first tank vs. tank action in history had taken place. Appropriately, the Mark IV, commanded by Lieutenant Frank Mitchell MC, was part of No. 1 Section, A Company, 1st Tank Battalion, the Tank Corps. This engagement was a response to one of the first attacks by German tanks. Most of the ground lost to the German attack was retaken by an improvised but decisive night attack conducted by a predominantly Australian force.

Deployment and Ground

The action took place between the small village of Cachy and the town of Villers-Bretonneux, which lies 17 kilometres east of Amiens, a vital supply base and transport hub for the British Expeditionary Force.[4] The first great German offensive of 1918 had almost reached Amiens after eliminating Fifth British Army from the order of battle and inflicting over 246,000 casualties.[5] The combined and desperate efforts of the Australians, British

[1] German order of battle is based on C.E.W. Bean, *The Official History of Australia in the War of 1914-1918,* Volume V, *The Australian Imperial Force in France during the Main German Offensive* (Brisbane: University of Queensland Press, 1983) [hereafter cited as 'Bean'] p. 559. Only the 77th Division was fresh; the others had been given short rests (Bean, p. 558).

[2] Based on Brigadier-General Sir James E Edmonds, *The [British] Official History of the Great War, Military Operations France and Belgium, 1918 March-April: Continuation of the German Offensive* (London: HMSO, 1947) [hereafter cited as 'Edmonds'], p. 405 and Bean p. 637. British losses are for 8th, 18th and 58th Divisions between 5 and 27 April.

[3] Based on Bean p. 637. This is an estimate only, reflecting a 30% 'uplift' for light casualties. Edmonds (p. 405) provides only a partial estimate.

[4] The operational-strategic importance of Amiens is described in Chapter 19.

French and British officers by the German A7V tank "Elfriede", captured near Villers-Bretonneux on 24 April 1918, Saleux, 18 May 1918. © IWM Q70017

cavalry and the survivors of the retreat finally stopped the attack in early April just to the east of Villers-Bretonneux. The front line then stabilised with 5th Australian Division holding to the north of Villers-Bretonneux and III British Corps defending the front around Villers-Bretonneux and southwards for 3 kilometres to just above the valley of the river Luce and the boundary with the French army.

The German salient just south of Villers-Bretonneux caused concern to Rawlinson and his commanders.[6] Both of III Corps divisions in the line, the 8th and 58th, had suffered severe casualties[7] during the German March offensive (Operation MICHAEL) and contained a good number of under 19 year-olds, who had been hurriedly rushed out to France. The defence was also weakened by the lack of time to complete the new lines defending Amiens, resulting in poor wire and shallow trenches.[8] The presence of the strong Australian Corps, just to the north of Villers-Bretonneux, however, provided crucial stiffening to the defence of Amiens.

The ground that the Australian and British divisions defended is rolling countryside, relatively little changed by shelling at that time and suitable for tanks with few obstacles except woods such as the Bois d'Aquennes, the town of Villers-Bretonneux itself (held by the 8th British Division) and villages such as Cachy. Cachy lies on a plateau that narrows to the west, but dominates the vital communications centre of Amiens. It is for this reason that General Ludendorff had selected this area for a limited attack to divert Allied attention from preparation for his next major offensive.

The German operation was to consist of the 228th and 4th Guards Divisions attacking Villers-Bretonneux, with the 243rd Division providing support north of the town. To the south, 77th Reserve Division was to take Cachy with the 208th on its left. The infantry attack was supported not only by the normal intensive artillery bombardment, but also, in their first major engagement, by 14 German tanks formed into three groups – one each supporting the 228th, 4th Guards and 77th Divisions.

[5] Cyril Falls, *The First World War* (London: Longman, 1960) p. 320: 163,000 British and 77,000 French including 90,000 prisoners.

[6] Edmonds, p. 382.

[7] The British 8th Division had lost nearly 5000 casualties since 21 March 1918; the 58th, 2365. Figures from Edmonds, p. 386, Note 3.

[8] Ibid., p. 385.

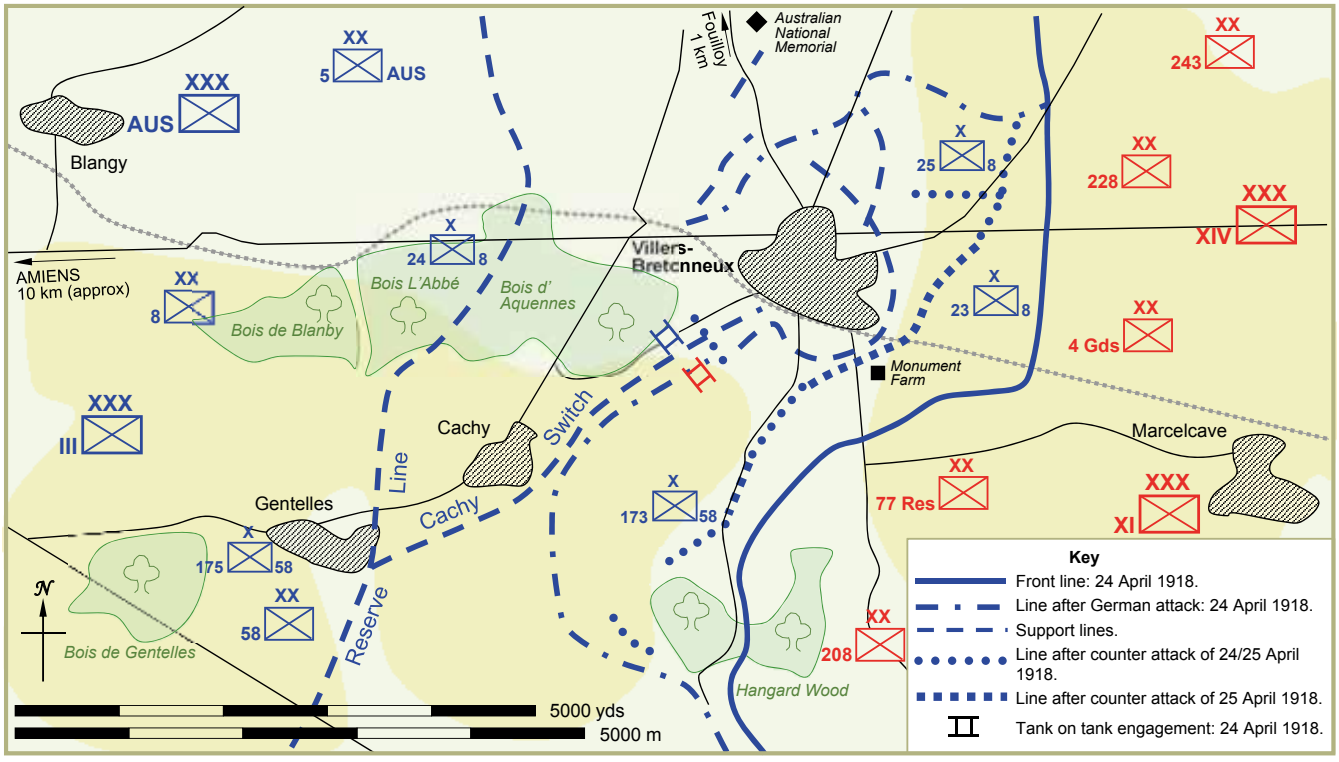
[9] A7V was the title of the seventh department of the Prussian War Office responsible for transport.

The Tanks

The German tanks were A7Vs.[9] Only 20 of these were produced – their design and history reflecting the ambivalence of the German army's attitude towards tanks during the First World World War. Development of the A7V had started in late 1916 in reaction to the first use of British tanks at Flers on 15 September 1916. The design was based on a Holt agricultural tractor with an armoured body mounted on it. The armament consisted of a nose mounted 57mm gun (the same calibre as the British Male Mark IV's 6-pounders) and four to six heavy machine guns. Despite a weight of 32 tonnes, the two 100 hp engines enabled the A7V to reach 8 kilometres/hour (5 mph, nearly 2 mph faster than a Mark IV). However, poor ground clearance, complex suspension, low nose and the high centre of gravity – caused by the combination of the Holt tractor and the large armoured body – gave the A7V a poor cross- country capability. The large crew of around 20 included artillerymen to serve the guns; infantrymen for the machine guns and motor transport crewman to drive the tank. The A7V could therefore be considered to be a tank designed by a committee and manned by one. Its development and production was hampered by a lack of urgency on the part of the German army until the battle of Cambrai in November 1917. It was not till January 1918 that the first Assault Tank Detachment was formed and the difficulties of its training in early 1918 reflected all the problems outlined above.

In contrast, the British Tank Corps by April 1918 was a well-trained and experienced organisation. After the losses incurred during the March 1918 retreat, 1st and 3rd Tank Battalions were re-equipped with Mark IVs and the new Whippet tank respectively. The Mark IV tank was a proven design. Its rhomboidal shape and wide track gave it good stability and cross country capability. Although its 105 hp engine limited its top speed to just over 5 kilometres/hour (3 mph), it was sufficient to support infantry assaulting through wire obstacles. The armament (two 6-pounders for a male tank or machine guns for female tanks) were mounted in two sponsons on either side of the vehicle, a design which not only increased its stability but also allowed the Mark IV, unlike the A7V, to engage targets side on as well as to the front. The Medium A Whippet, a new light (14 tonnes) tank with higher speed (13 kilometres/hour, 8 mph) and armed with four machine guns, was designed for exploitation.

The two Tank Corps sub-units involved in the first tank to tank action on 24 April 1918 were: No. 1 Section, A Company, 1st Tank Battalion, consisting of one male (Lieutenant Mitchell's) and two female Mark IVs, commanded by Captain John Brown MC; and X Company of 3rd Tank Battalion equipped with 7 Whippets, commanded by Captain T R Price DSO MC.



Map 21.1 – The First Tank vs. Tank Action at Villers-Bretonneux, 24 April 1918

A Mark IV, commanded by Lt Mitchell, engaging A7V No. 561 'Nixe', commanded by Lt Biltz.
© David Rowlands, artist.[10]

The Battle

The German offensive began with an intense two and a quarter hour bombardment with first the shelling and gassing of roads, rear areas and batteries to force the gun crews to wear gas masks and then the shelling of the front line alone. As one British officer recalled:

> The morning was very misty and the natural and the artificial fog combined made it difficult for men in the front line to see more than 20 yards ahead. Suddenly at about 7 am, looming large and terrible out of the climbing wall of fog, enemy tanks close up … [They] kept on their way unchecked, until they gained a position astride our trenches which they proceeded to rake with enfilade machine gun fire, so covering the assault of the German infantry …the forward companies …were in this way overwhelmed. [11]

On the northern side of Villers-Bretonneux, 228th German Division, supported by the three A7Vs of Group I, overran the British defences. On the southern edge of the town, the six A7Vs of Group II (supporting 4th Guards Division) overcame the British strong point at Monument Farm and assisted the advance of the two lead assault regiments as far as the western edge of the Bois d'Aquennes, just to the west of Villers-Bretonneux. By 0835 hours the Australians, who held the high ground to the north of Villers-Bretonneux, reported that the town had fallen. The British 8th Division had been forced out of its defences, and now Amiens was directly threatened.

Meanwhile, on receiving the news of the German attack at about 0800 hours, Brigadier-General R. W. Glasgow DSO, commanding 13th Australian Brigade, which was defending the northern approaches to Villers-Bretonneux, and Captain Browne, 1st Tank Battalion, went forward on foot to discover the real situation. On their return, 'the tank commanders were given the order to proceed to the Cachy switch line and hold it at all costs'.[12] The three Mark IVs, one male and two female, moved off at 0845 hours to reach the Cachy switch line just under 2 miles away at 0945 hours with Lieutenant Mitchell's Male Mark IV on the left (east) nearest the Bois d'Aquennes. As his tank approached the Cachy switch line an infantryman warned

[10] See http://www.davidrowlands.co.uk/ for further details.

[11] [Captain] G. H. F. Nichols, *The 18th Division In The Great War* (London: Blackwood, 1922) p. 203. [Republished in 2006 by the Naval & Military Press.]

[12] Lieutenant F. Mitchell MC, 'The First Tank v. Tank Duel – Villers-Bretonneux, 24th April 1918', *The Royal Tank Corps Journal,* vol. I (January, 1937) pp. 26-33.

Villers-Brettoneux, Australian National Memorial.
© Barbara Taylor

him that there were German tanks about and Mitchell saw three 'weirdly shaped objects'.

These enemy tanks were the three remaining A7Vs of Group III, which led the advance of 77th Reserve Division over the open ground between just south of the town to Bois de Hangard and their objective, Cachy in the west. However, the fog scattered these tanks, which became lost when trying to manoeuvre round the northern edge of the Bois de Hangard. Two A7Vs[13] were held just to the north of the Bois de Hangard and would not enter combat until about 1100 hours. The third German tank was A7V No 561 'Nixe'[14] commanded by Leutnant Biltz. Delayed by mechanical problems, his A7V was approaching Cachy from the east when he saw three British tanks (the three Mark IVs of No 1 Section), which he engaged. Mitchell's Male Mark IV was patrolling the Cachy switch line when his section commander appeared in the open and pointed to the two female Mark IVs, which were retiring from the battlefield after being holed by shellfire from the 57mm of 'Nixe'. The time was about 1020 hours. Mitchell advanced his tank towards Cachy; when opposite A7V 'Nixe', he halted. His left hand gunner then scored three hits, which killed one German gunner, mortally wounded two more and slightly injured three others. The survivors promptly evacuated their tank. The A7V's crew had been concentrating on the two female tanks and had falsely assumed that Mitchell's tank had been knocked out because it was stationary.

About 40 minutes later (1100 hours), Lieutenant Mitchell saw the seven Whippets of 3rd Battalion approaching the northern edge of Cachy from the north-west. These light tanks had moved forward from their hide on receiving orders at 1030 hours to disperse two German battalions reported to be forming up about a 1000 yards to the east of Cachy. After completing a quick reconnaissance, Captain Price then (according to his post-war account):

> …assembled Section and Tank commanders quickly, … ordered them to form line and … charge at full speed southwards, dispersing any enemy on the way. On reaching the skyline …, they were to turn back and charge through the enemy again on the way back. My deductions as to the position of the enemy proved correct. The charging tanks came upon them over a rise, at point blank range, apparently having a meal as several bodies had laid aside arms. The tanks went straight through them, causing great execution by fire, and by running over many who were unable to get away. They turned and came back through the remnants again, utterly dispersing them, and the second phase of the attack on our lines never materialised.[15]

Meanwhile, A7V 525 'Siegfried' had rallied German infantry north of the Bois de Hangard and was moving towards Cachy. On seeing the Whippets it, with the 77mm guns of a German field battery, engaged them and hit three of the British tanks (one was burnt out)[16]. The remaining Whippets withdrew at about 1130 hours past Mitchell's Mark IV. So ended the first tank actions.

[13] No. 504 'Schnuck' commanded by Leutnant Müller, and No. 525 'Siegfried' commanded by Leutnant Bitter.

[14] 'Nixe' means mermaid, water sprite or water nymph in German.

[15] An account by Captain T R Price DSO MC, Royal Tank Corps, dated January 12th 1931.

[16] Maxwell Hundleby and Rainer Strasheim, *The German A7V and the Captured British Mark IV Tanks of World War I* (Sparkford: Haynes, 1990) p.122.

The Aftermath and the Counter-Attack

The German attack petered out. Lieutenant Mitchell's Mark IV was hit at about 1230 hours by a Germany heavy mortar. The remaining A7Vs withdrew. Later, 'Nixe' was recovered by its crew. 1st Tank Battalion recovered No. 542 'Elfriede' in mid May; the Australians seized another, No. 506 'Mephisto'. The latter was taken back to Australia, where it remains, the only surviving A7V.

The ground lost on 24 April was retaken in a brilliant night attack by the Australian 5th Division, supported by British troops. This position was to form part of the start line for the Battle of Amiens, 'The Black Day of the German Army', on 8 August 1918.[17]

Commentary

Undoubtedly, the British tank actions at Villers-Bretonneux had helped stabilise the situation after the loss of the town, and prevented further penetration towards Amiens. Lieutenant Mitchell wrote in an article in the Royal Tank Corps Journal that 24 April 1918 represented 'a red-letter day in tank history', for it witnessed 'the first appearance of German tanks and very much their Cambrai'. Furthermore, it 'was the first full-dress appearance of the Whippets and a striking demonstration of the superiority of speed plus armour plate against unprotected masses of slow-moving infantry'. He continued that fortune favoured him in the engagement, but that he had three trusted allies: reconnaissance, observation and range of fire.

General Heinz Guderian, who was not only the leading German proponent of armoured warfare before the Second World War, but also a successful leader of armoured forces in Poland (1939), France (1940) in the Soviet Union (1941), wrote that these first tank actions in 1918 furnished a number of valuable lessons. They included that while the tank's most dangerous enemy is another tank, other weapons such as artillery, and anti-tank guns in particular, must take part in the armoured battle.[18] Guderian had analysed correctly the requirement for integrated, combined arms action, which he was to demonstrate so effectively in the opening 'Blitzkrieg' campaigns of the Second World War.

The Battlefield Today

The ground has changed relatively little since 1918. There is a small monument at the location of the first tank-to-tank action on the road from Cachy to Villers-Bretonneux. The minor road leading east out of Cachy village is a good place to view the area of the German tank advance and the Whippet action. Lieutenant Harry Dale, the commander of one of the Whippets, is buried in Crucifix Corner Cemetery just south of Villers-Bretonneux.[19] The Villers-Bretonneux Memorial just to the north of the town is the Australian National Memorial erected to commemorate all Australian soldiers who fought in France and Belgium during the First World War. The Australian servicemen named in this register died in the battlefields of the Somme, Arras, the German advance of 1918 and the Advance to Victory. The memorial stands within Villers-Bretonneux Military Cemetery, which was constructed after the Armistice when graves were brought in from other burial grounds in the area and from the battlefields.

Geoffrey Vesey Holt

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[17] Described in Chapter 26.

[18] Major General Heinz Guderian, trans. Christopher Duffy, *Achtung-Panzer!* (London: Arms and Armour Press, 1992) [First published in German in 1936] pp. 187-188.

[19] See Commonwealth War Graves Commission web site for details. See also http://ww1centenary.oucs.ox.ac.uk for a map of CWGC cemeteries.

22. Operation BLÜCHER (The Third Battle of the Aisne)

(27 May – 5 June 1918)

Description	Allied	German
Senior Commanders	Allied General-in-Chief, General Ferdinand Foch French Commander-in-Chief, General Philippe Pétain	German Commander in Chief, Field Marshal Paul von Hindenburg First Quartermaster General of the German Army, General of Infantry Erich Ludendorff
Principal Subordinate Commanders	Commander-in-Chief, French Sixth Army, General Denis Auguste Duchêne Commander IX (British) Corps, Lieutenant General Sir Alexander Hamilton-Gordon	Commander-in-Chief, Army Group German Crown Prince, Crown Prince Wilhelm Commander-in-Chief Seventh Army, Colonel General Max von Boehn
Principal Forces Engaged	French Sixth Army: 11 Divisions, 1,400 Guns British IX Corps: 18th, 19th (Western) 21st, 25th, 50th (Northumbrian) Divisions	Army Group German Crown Prince: Seventh Army—29 Divisions, 3,263 Guns
Context	Despite being ordered by Pétain to defend in depth, Sixth Army commander Denis Duchêne mounted a rigid forward defence along the Chemin des Dames. His forces were devastated by Bruchmüller's hurricane bombardment and the subsequent German ground attack. The Sixth Army collapsed: the French line only stabilized after the Germans had advanced more than 56 kilometres.	Operation BLÜCHER was a diversionary attack prior to Operation HAGEN, which was supposed to drive the BEF off the Continent. BLÜCHER was designed to appear to threaten Paris and pull French reserves out of Flanders. BLÜCHER's objective was the river Vesle. But when German forces exceeded that objective on the first day, Ludendorff succumbed to opportunism and ordered the attack to keep going.
Casualties	96,160 French 28,703 British 474 American	105,370 German
Consequences	Realizing that the German attack was advancing into the French depth and would culminate before reaching any significant Allied vulnerability, Foch kept in place most of the French reserve formations behind the British in Flanders. When BLÜCHER was over, the correlation of forces here (in the north) still made it impossible for the Germans to launch HAGEN.	The attack reached culmination on the river Marne, near Château-Thierry. After ten days of fighting and irreplaceable casualties, the Germans again failed to accomplish a single operational objective and were left holding another huge and vulnerable salient. Even worse, they had no viable lines of communications into the BLÜCHER salient.

Introduction

By the middle of April 1918 the Germans no longer had any possible chance of winning the First World War militarily. The two great German offensives against the BEF, Operation MICHAEL (21 March – 5 April), and GEORGETTE (9-29 April) had captured huge swaths of terrain, simultaneously inflicting 367,000 casualties on the Allies.[1] But all the German gains were purely tactical, resulting in no operational or strategic advantages. The German operational situation had in fact worsened, because they were now left holding two very large and difficult to defend salients opposite the British. Strategically, the German situation was worse still. They had suffered 326,000 casualties in the first two offensives; but unlike the Allies, the Germans could not make up for those losses. Meanwhile, fresh albeit inexperienced American troops continued to arrive in France in large numbers.

The Germans had no other realistic alternative but to shift to the defensive and attempt to negotiate an end to the war. Ludendorff, however, could not bring himself to accept a negotiated settlement, especially since the British certainly would have insisted that Germany relinquish all control over the Belgian coast. Moreover, the stunning tactical successes achieved during Operations MICHAEL and GEORGETTE only served to convince Ludendorff that he could force an Allied collapse with just one or two more hard pushes.

Planning and Deployment

The BEF in Flanders remained Ludendorff's primary objective. Within days after GEORGETTE ended he ordered Crown Prince Rupprecht of Bavaria's Army Group to start planning for Operation HAGEN, which Ludendorff envisioned as a renewal of GEORGETTE, but on a much larger scale. If HAGEN could push the BEF off the Continent, Ludendorff was certain that the French would collapse, despite the continuing arrival of the Americans. But the Allies in Flanders were now too strong. In response to MICHAEL and GEORGETTE, the newly appointed Allied general-in-chief, French General Ferdinand Foch, had moved considerable numbers of French reserve units north of the river Somme. Those reserves had to be drawn off before the Germans could attack the BEF again. Ludendorff, therefore, conceived a large-scale diversionary attack south of Saint-Quentin and west of Reims, designed to look like an attack on Paris. Ludendorff reasoned that the French would pull all their reserve divisions out of Flanders to establish a blocking force in front of Paris.

On 18 April 1918 Ludendorff ordered German Crown Prince Wilhelm's Army Group to start planning and preparing for Operation BLÜCHER. Wilhelm's forces were supposed appear to be attacking toward Paris by sweeping over the Chemin des Dames ridge and then advancing only about twenty kilometres to the south, halting after crossing the river Vesle and taking the high ground on the far bank. The Germans would then shift rapidly back to the north and follow up with Operation HAGEN after the French reserve divisions started moving south to protect Paris.

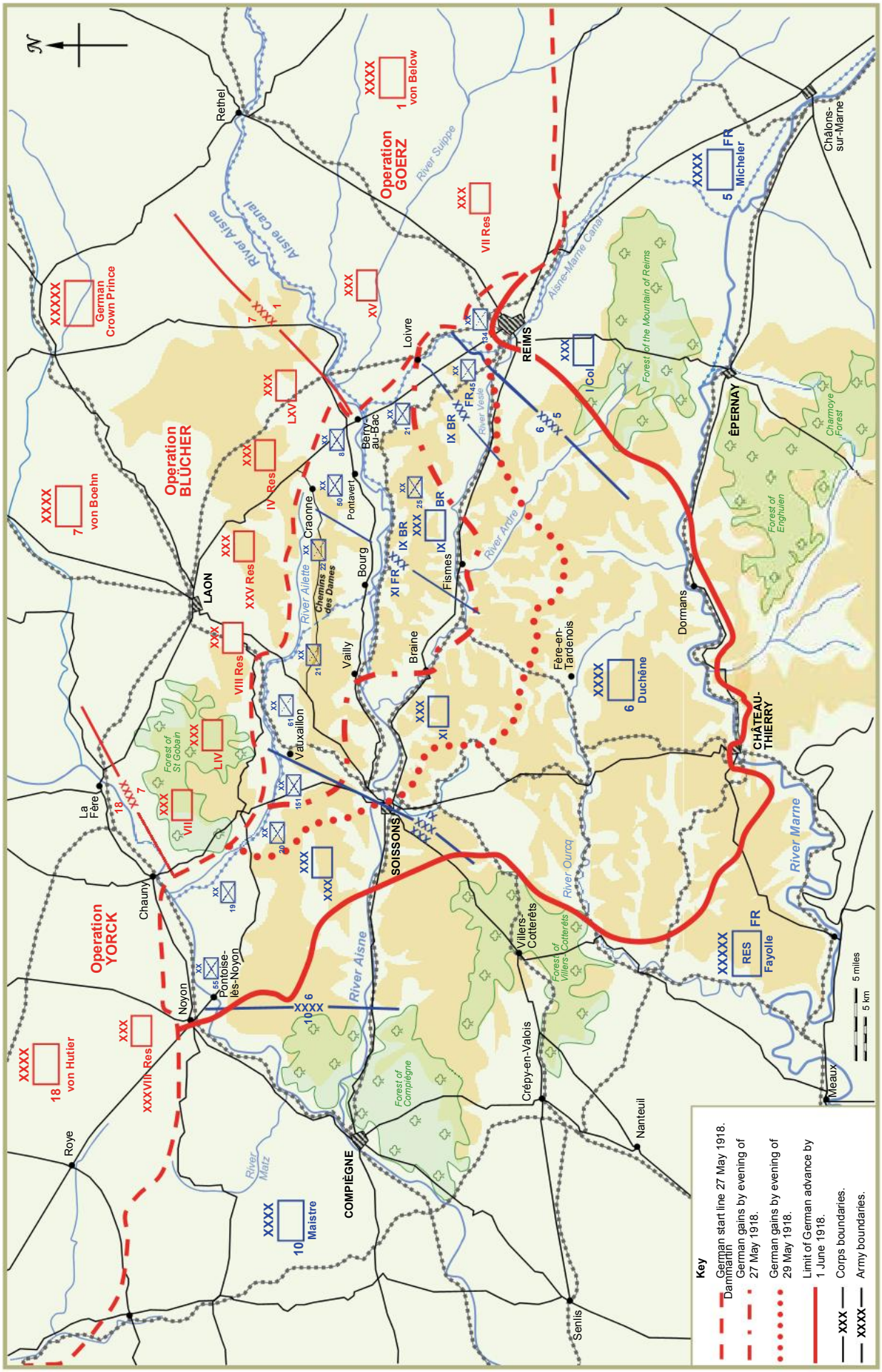
The German Seventh Army under the command of Colonel General Max von Boehn was the main effort. It attacked from north to south with six corps (29 divisions, of which 17 were in the first echelon[2]) across a 70-kilometre front from Chauny on the river Oise to Loivre on the Aisne-Marne canal, north-northwest of Reims. Two smaller supporting attacks were Operation GEORZ, conducted by two corps of General of Infantry Otto von Below's First Army on the left, and Operation YORCK, by one corps of General of Infantry Oskar von Hutier's Eighteenth Army on the right. As in their previous two Spring offensives the Germans weighted the attack heavily with artillery, and again Colonel Georg Bruchmüller was brought in to do the fire planning. The Germans massed 5,263 tubes against 1,422 French and British guns. The resulting 3.7-to-1 ratio was the highest artillery superiority the Germans achieved during any of the battles on the Western Front between 1914 and 1918.

Almost right up until the day the Germans attacked, Foch continued to believe the Germans would renew their offensive in the north. On 22 May Foch confidently told General Sir Herbert Plumer that the Germans would attack in the Albert-Arras sector. The French defence in the Champagne sector, meanwhile, was based on holding the Chemin des Dames ridge with the river Ailette to its immediate north. This dominant feature had been recaptured from the Germans during the Nivelle offensive in May 1917.[3] Facing the main German attack was General Denis Duchêne's weak French Sixth Army with eleven infantry divisions in the front line and five in reserve. These included five battered divisions of the British IX Corps, which, having faced both the German offensives of March and April, had been transferred from Flanders to reconstitute in a supposedly quiet sector. Sixth Army

[1] These two offensives are described in Chapters 19 and 20 respectively.

[2] Following the 17 divisions in the first echelon of attack were five in the second. Held in a third echelon were two divisions of Seventh Army reserve and five in Oberste Heeresleitung (OHL) reserve, making a total of 29 divisions initially committed to Operation BLÜCHER.

[3] Described in Chapter 14.



Map 22.1 – Operation BLÜCHER, 27 May – 5 June 1918

was deployed as follows: on the left, XXX Corps held the line from Pontoise-lès-Noyons to Vauxaillon; in the centre, XI Corps to just west of Craonne; and then on the right, IX (British) Corps to Loivre.[4] Further right still was 45th (French) Division, to the north-west of Reims.

The Battle

The German artillery opened fire at 0200 hours on 27 May. The preliminary preparation was Bruchmüller's masterpiece: the Allies were caught almost completely by surprise.[5] All firing was done using the calculations of the new Pulkowski Method, which used weather and other ballistic factors to compute registration corrections, rather than determining such corrections by firing, which would have compromised surprise. Although the preparation lasted a mere two hours and 40 minutes, the German gunners hardly missed a forward position, communications trench, command post, or Allied battery. The fire effect was especially devastating because Duchêne had ignored Pétain's orders to adopt a defence-in-depth with a thinly held front line. The Sixth Army commander-in-chief also unwisely rejected the strong recommendations of his British divisional commanders, who had recent first-hand experience of a Bruchmüller bombardment, dismissing his Allied subordinates with a curt *'J'ai dit'.* Refusing to yield an inch of sacred French soil without a fight, Duchêne packed his forces into the front lines, where they became easy targets for Bruchmüller's guns. The German artillery fired three million rounds on the first day of Operation BLÜCHER, 50 per cent of which were gas projectiles.

Crossing the line of departure at 0440 hours, 20 minutes before first light, the German infantry advanced, preceded by a double creeping barrage. Attacking up hill from the northern base of the Chemin des Dames, they secured the eastern end of the ridge by 0630 hours. Less than four hours later the lead German units crossed the river Aisne, five kilometres miles south of crest of the Chemin des Dames. Using the infiltration tactics they had used with such effect during MICHAEL and GEORGETTE, the advancing *Landser* moved so fast that the French and British could not withdraw their artillery from the north side of the Aisne. The attackers captured some 45,000 prisoners and 650 guns as they surged forward. The Allies also failed to blow the bridges over the Aisne, further facilitating the German advance.

By the end of 27 May the German lead elements reached and then crossed the river Vesle, advancing a total of 21 kilometres exceeding the objective for the entire operation. It was the largest single-day advance on the Western Front during the First World War. By the evening of 28 May the German penetration was 24 kilometres deep and 67 kilometres wide at its base. But although Ludendorff had reached his geographic objective far more quickly than he had planned, there were no indicators yet that any significant numbers of the French reserve units were starting to move out of Flanders. Ludendorff had to make a decision: as he had done previously in MICHAEL and GEORGETTE, he completely abandoned the original plan and opportunistically attempted to exploit local tactical success. Without clearly identifying new operational objectives, he ordered the Seventh Army to continue pushing south. In support, he started committing and redeploying from Flanders some of the precious assault divisions he had been husbanding for HAGEN.

The Germans captured Soissons on 29 May and Fère-en-Tardenois on the river Ourcq the following day. All French resistance seemed to disintegrate in the German path. Pétain committed his sixteen available reserve divisions with little apparent effect. Then, doing exactly what Ludendorff had originally wanted, Pétain requested the immediate transfer to his control of the Allied theatre reserves in Flanders. But Foch recognized that unlike MICHAEL or GEORGETTE, Operation BLÜCHER was an operational dead end that would have to culminate before reaching any significant objective. Foch slowly released a few units, but for the most part he maintained the strength behind the BEF.

Although the German lead elements reached the north bank of the Marne at Château-Thierry on 1 June, the German drive was clearly faltering on the shoulders of the huge salient. The Allies managed to hold on to the important rail centres of Reims in the east and Compiègne in the west.[6] Those two key junctions controlled the access to the only major rail line into the BLÜCHER salient. Without access to that line, German logistics problems would soon become critical.

[4] More specifically, the British front, held by the 8th, 21st and 50th Divisions, ran from Bouconville (near Craonne) to Berméricourt (near Loivre). From the heights of the Chemin des Dames ridge, this line dropped in a south-easterly direction down on to flatter ground to Berry-au-Bac, where it crossed the Aisne, and then paralleled the Aisne-Marne Canal towards Reims. 25th Division was held in Corps reserve while 19th Division was held further back to rest, train and reorganise. The latter formation was committed into the battle on 28 May and was heavily engaged the next day.

[5] Similar to the British method of predicted fire first demonstrated at Cambrai in November 1917. See Chapters 18, 29 and 31 for further details.

[6] The British 19th (Western) Division played a prominent role in this stage of the battle by blocking the German advance up the valley of the river Ardre, and so frustrating the envelopment of Reims from the south-west. See Everard Wyrall, *The History of the 19th Division* (London: Edward Arnold, 1932) pp. 193-209.

Among the reinforcements Foch did feed to Pétain were the U.S. 2nd and 3rd Divisions. During three days of fierce fighting beginning on 1 June, the Americans repulsed all German attempts to cross the river, earning the title 'The Rock of the Marne' that the U.S. 3rd Infantry Division still carries. The Germans' worst nightmare had come to pass: the U.S. Army was making its presence felt on the battlefields of the Western Front far sooner than anticipated.

Commentary

On 5 June 1918, Crown Prince Wilhelm's Army Group halted Operation BLÜCHER and ordered the Seventh and First Armies to consolidate their gains. Although the French capital had never been their objective, the Germans were now less than 70 kilometres from Paris. On the surface the situation appeared desperate for the Allies. But the Germans were in no position to exploit their advantage. They did not have the combat power, the mobility, or the logistics to reach Paris, even if they had wanted to. In eleven days of fighting, the Allies had suffered approximately 125,000 casualties. The Germans lost some 105,000 men, and all they really had to show for it was another huge salient to defend.

Worse, the lines of communications into the BLÜCHER salient were very poor and completely incapable of supporting the logistics flow necessary to maintain the troops defending it. Worse still, Ludendorff had squandered thirteen of the twenty-six HAGEN attack divisions in BLÜCHER, and those divisions had to be reconstituted. But before he could even think of trying to launch HAGEN, Ludendorff had to get control of that Compiègne-to-Reims rail line by taking the rail centre at one end or the other. That imperative drove the fourth and fifth of the Ludendorff Offensives, Operation GNEISENAU on 9-16 June, and Operation MARNESCHUTZ-REIMS on 15-18 July, while Operation HAGEN was put on hold.

Following the failure of both of those offensives, HAGEN was finally scrubbed after the Allies launched their massive counterattack into the Germans' over-extended BLÜCHER salient on 18 July 1918 during the Second Battle of the Marne.[7] Thus Operation BLÜCHER, the Third Battle of the Aisne, although an outstanding German tactical success, not only denied Ludendorff further success in Flanders but also very much set the conditions for the Allies' decisive operational-level victory at the Marne.

The Battlefield Today

The ground between the Chemin des Dames and the river Marne was poor terrain for any large-scale attack. Hilly and compartmentalized, the prevailing ridgelines, rivers, and roads all run east-west, while the Germans were advancing from north to south. Most of that area north of the Marne has been built up very little since 1918, and any experienced soldier today can still quickly see the problems of the terrain. The steep, bald Chemin des Dames ridge, fought over so many times during the First World War, appears still much as it was in 1918. The initial British positions were on the eastern end of the Chemin des Dames, from Craonne to Loivre. The Bois des Buttes sits astride the D89 road north-west of Pontavert, where the 50th Division's 2nd Devons stood fast on 27 May until they were almost completely annihilated. The Devons' Memorial stands opposite the Marie in the village of Ville-aux-Bois-lès-Pontavert. A plaque honouring the 5th (Gibraltar) Battery, 45th RFA Brigade, is in the wall of the Marie.

David T. Zabecki

The Third Battle of the Aisne. A column of the Leib Garde Dragoner Regiment marching forward at Vailly-sur-Aisne, June 1918 © IWM Q55353

[7] Described in Chapter 24.

Georg Bruchmüller

Georg Bruchmüller (1863-1948) was arguably history's most innovative and influential artillery tactician. A German career Foot Artillery (heavy artillery) officer, he was medically retired as at lieutenant colonel in 1913. Recalled at the start of the First World War, he was assigned as a divisional artillery commander on the Eastern Front. Experimenting with various fire support tactics, he produced exceptional results. Eastern Front commanders started asking for him to plan their fires, contributing significantly to the German successes at Lake Naroch in April 1916 and Riga in September 1917. In late 1917 he transferred to the Western Front as the artillery commander of General Oskar von Hutier's Eighteenth Army. Following Operation MICHAEL in March 1918, Ludendorff put Bruchmüller effectively in charge of the fire planning for all the remaining German offensives.

Although Bruchmüller did not necessarily invent all of the fire support techniques he became famous for using, he was the first to integrate all the innovations into a coherent tactical system. Up until 1918 the massive artillery preparations on the Western Front lasted days and even weeks. Bruchmüller's preparations lasted only hours, but with better effect. He was one of the first to recognize that artillery's ability to neutralize the enemy temporarily through shock effect was more important than its only too often inadequate capability to destroy enemy fortifications. Bruchmüller organized his preparations into distinct phases, with the combinations of guns and ammunition assigned to each phase designed to achieve precise tactical effects. He developed a system of task-tailored artillery groupings for specific tactical missions. He also made the first practical use of the system developed by his assistant, Major Erich Pulkowski, for predicting registration corrections based on current meteorological data.

Bruchmüller was one of only five German officers below the general ranks to win the Pour le Mérite with Oak Leaves. In 1939 he was promoted to major general on the German Army's retired list.

David T. Zabecki

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The Third Battle of the Aisne. French and British wounded coming in together, Muscourt, 27 May 1918 © IWM Q 6661

23. The Battle of Belleau Wood
(6 – 26 June 1918)

Description	American	German
Senior Commanders	Major General Omar Bundy	Lieutenant General Richard von Conta
Principal Forces Engaged	**2nd Division** 4th Marine Brigade 5th Marine Regiment 6th Marine Regiment 3rd Brigade 9th Infantry Regiment 23rd Infantry Regiment	**IV Reserve Corps** 197th Division 237th Division 10th Division (elements) 28th Division (elements) 5th Guards Division (elements)
Context	Without proper reconnaissance or adequate artillery support, the U.S. 4th Marine Brigade attacked into Belleau Wood to expel the Germans from the positions they had captured near the end of their Operation BLÜCHER. Despite taking heavy casualties, the Marines succeeded after twenty days of fierce fighting.	When Operation BLÜCHER reached culmination and failed to draw the French reserves out of Flanders, the attacking German forces dug in and prepared to defend their large and untenable salient north of the Marne. Initially they did not consider the newly arrived and inexperienced Americans to be a significant threat.
Casualties	1,811 Killed 7,966 Wounded	Unknown Killed and Wounded 1,600 Captured
Consequences	The Americans won, but at a huge cost. They also learned the hard lesson that their naïve notions about the superiority of American rifle marksmanship over European-style trench warfare had no basis in reality. The Battle of Belleau Wood was a steep and severe learning curve: the Americans were climbing it faster than the Germans had anticipated.	Even though the most optimistic of the senior German commanders believed that they no longer had a chance of winning the First World War on the battlefield, they thought that they had at least a year left to find some other solution; they believed it would take the newly arrived Americans that long to become combat effective. After Belleau Wood they knew otherwise.

Introduction

The Battle of Belleau Wood was the defining event in the history of the United States Marine Corps. It was the Corps' first large-scale engagement and it foreshadowed the epic Marine battles of later wars, from Guadalcanal (1942) through Chosin Reservoir, Korea (1950) to Fallujah (2004). Many of the Corps' senior leaders of the Second World War fought at Belleau Wood. It was also the second major American engagement of the war, the first having been the U.S. 1st Division's successful attack at Cantigny on 28 May 1918.

Planning and Deployment

Following the failure of Operation GEORGETTE against the British in April 1918, the Germans no longer had the combat power necessary to push the BEF off the Continent. With seventeen French divisions in Flanders, the Allies were just too strong in the north. Refusing to relinquish the operational initiative, Ludendorff opted to conduct a large-scale diversion to draw off those French forces by appearing to threaten Paris. Operation BLÜCHER was that diversion, launched on 27 May 1918 along the Chemin des Dames, heading toward the Marne. This third of Ludendorff's great 1918 offensives was, like the first two, a huge tactical success. But like the previous two, it was an operational dead end. Recognizing BLÜCHER for the feint it was, Allied supreme commander General Ferdinand Foch refused to move the French reserves. Nonetheless, by early June German troops were on the Marne River at Château-Thierry, but they were left holding another huge and vulnerable salient.

On 1 June 1918 the U.S. Army's 2nd Division, commanded by Major General Omar Bundy, moved into the front line opposite the right wing of German IV Reserve Corps, commanded by Lieutenant General Richard von Conta. Under the overall command of French XXI Corps, the U.S. 2nd Division held a three-mile sector centred on Lucy-le-Bocage. The division's 3rd Brigade, commanded by Brigadier General Edward M. Lewis, consisted of the 9th and 23rd Infantry Regiments. The division's 4th Marine Brigade, commanded by Army Brigadier General James Harbord, consisted of the 5th and 6th Marine Regiments. The 9th Infantry deployed on the right of the Paris-Metz Highway, with the 6th Marines deployed to their left. The 23rd Infantry and 5th Marines were held in reserve initially. An American division of 1918 was a huge organization: with sixteen battalions it was more than twice the strength of the typical European division of the period.

Just as Operation BLÜCHER came to an end, XXI Corps commander General Jean-Marie Degoutte ordered American forces to take the Bois de Belleau, a small patch of forest near the southwestern extremity of the newly established German salient. The wood, about a mile in length and half that at its widest point, was located about five miles northwest of the town of Château-Thierry on the Marne River. The 1,200-man 461st Infantry Regiment of the 237th Infantry Division of Conta's IV Reserve Corps had occupied the three-square-mile sector and turned it into a defensive bastion. The 237th Division was a Stellungsdivision (trench division), trained and organized specifically to hold ground.

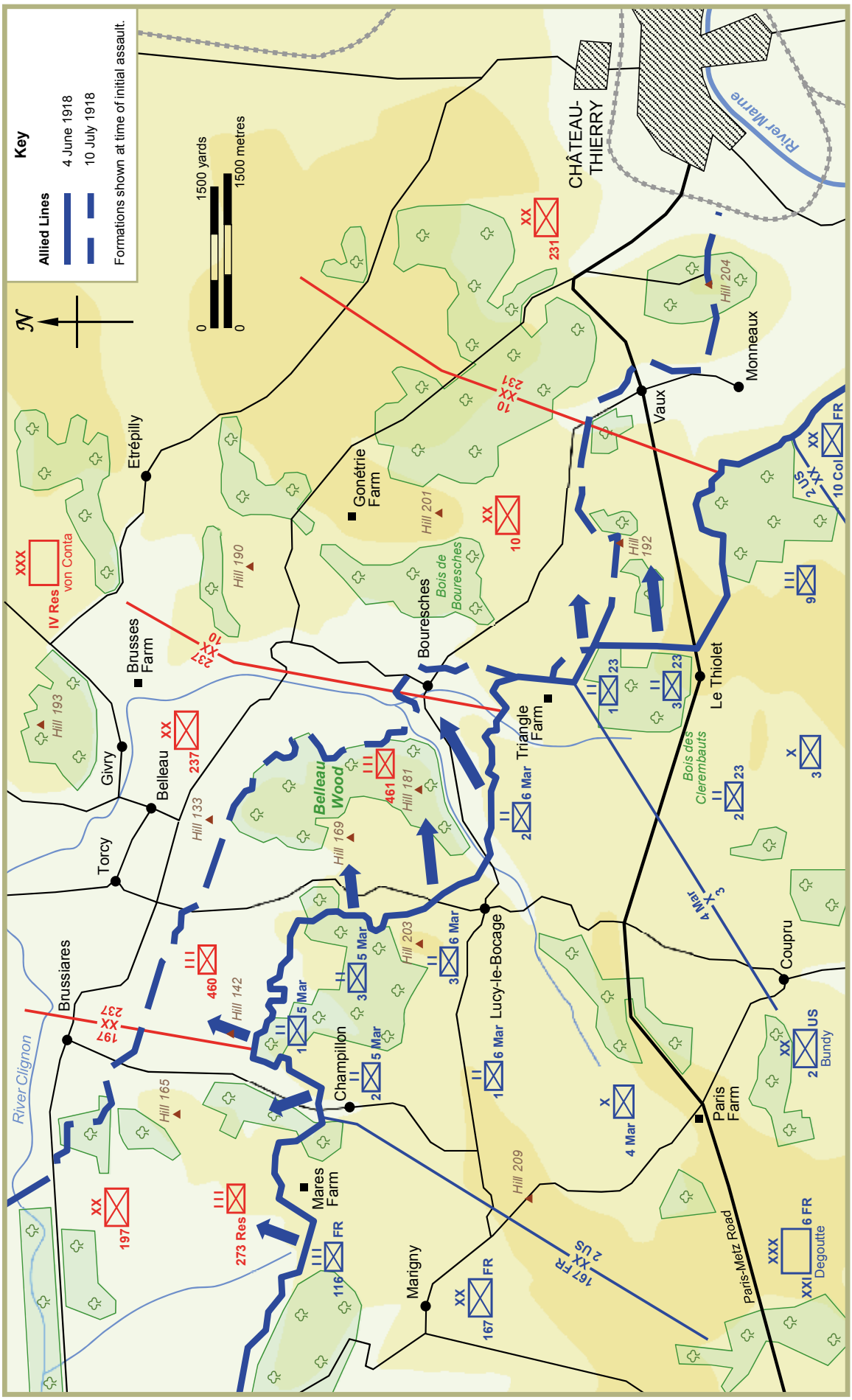
The Battle

Between 1 and 5 June 1918 the 2nd Division beat off successive German attacks. Late on 5 June, the German Seventh Army under the command of German Crown Prince Wilhelm terminated Operation BLÜCHER. The following day, without benefit of any reconnaissance of the German positions, the U.S. 4th Marine Brigade received orders to occupy Belleau Wood, which was declared by the French to be free of Germans. Harbord requested additional artillery support from XXI Corps, but Degoutte rejected the request as unnecessary.

At dawn on 6 June the 5th Marines attacked Hill 142, the high ground just to the west of the wood. Control of the hill was necessary for the follow-on attack into the wood, and also to support the French 167th Division, which was attacking on the 2nd Division's left. German machine guns firing from the wood into the Marines' right flank inflicted very heavy casualties, but Hill 142 fell later that afternoon. At 1700 hours that day a battalion each from the 5th and 6th Marines made frontal assaults directly into the wood. Advancing in well-dressed formations toward the wood line through open fields, the attackers were cut down in waves. By nightfall the Marines captured the village of Bouresches on the eastern end of the woods and secured a foothold inside the wood itself. But they had suffered that day 1,087 dead or wounded – more casualties than the Marine Corps had taken during its entire 143-year history to that point.

The fighting inside the wood raged back and forth for the next two days. On 9 June the Marines pulled back to allow French and American guns to fire a massive barrage into the forest, turning it into a wasteland of shattered trees. The following day the Marines attacked again, but they only managed to advance as far as their 8 June positions. Over the next four days of constant the Marines secured some two thirds of Belleau Wood, but again at the cost of heavy casualties. On 13 June the Germans counterattacked and almost recaptured Bouresches, but their attack stalled under concentrated American rifle fire.

Exhausted, both sides dug in and the positions remained static for ten days. On 24 June the Marines resumed the assault and two days later Major Maurice E. Shearer, commander of the 3rd Battalion, 5th Marines, sent the message, 'Woods now U.S. Marine Corps entirely'. During the twenty days of fighting the 4th Marine Brigade's casualties totalled almost 55 per cent of its total strength.



Map 23.1 – The Battle of Belleau Wood, 6-26 June 1918

The U.S. Marine Corps fighting in Belleau Wood.
(Georges Scott, artist's impression)

Commentary

The merits of the Marine victory at Belleau Wood have been much debated. Many French believed at the time that the Marines had 'saved Paris' by halting the Germans. Lying only 39 miles (70 kilometres) from Paris, Belleau Wood was as close as the Germans got to the French capital in 1918. The Germans, however, never intended to attack Paris. As all their operations orders make clear, the purpose of Operation BLÜCHER was solely a diversion. Besides, the Germans themselves halted the offensive the day before the Americans attacked into the woods. Furthermore, it is impossible to conclude that one single American brigade could have halted the 42-division German attack across a 60-mile front.

Some critics have seen the battle of Belleau Wood as being of little value, and claim that much of the slaughter could have been avoided through more effective tactics. The battle, however, endeared the Marines to the American public and helped secure continuation of the Corps. Three Marines and two attached U.S. Navy medical officers won the Medal of Honor during the battle. Two future commandants of the Marine Corps fought there, both wining the Navy Cross.

More importantly for the course of the First World War, German commanders and staff officers were shocked by how well the Americans had fought. They were forced to face the reality that their assumption that it would be at least a year before the newly-arrived Americans would be combat effective was wishful thinking at best. Legend holds that from this battle the German soldiers called the Marines "Teufel Hunden" (Devil Dogs). This is highly unlikely because it is grammatically incorrect German. The correct form would be *Teufelshunde*.

The Battlefield Today

The countryside around Belleau Wood is little changed today. Farm fields still surround the woods, which are a well-preserved 200-acre historical park maintained by the American Battle Monuments Commission. Shell holes and trench lines are still visible in the woods. A large Marine monument stands in a clearing at the centre of the wood, surrounded by vintage artillery pieces and mortars. A German military cemetery nearby contains 8,625 burials, 4,321 of them—3,847 unknown—resting in a common grave. Immediately north of the wood, just outside the village of Belleau, the 42-acre Aisne/Marne American Cemetery has 2,289 grave sites, and 1,060 names listed on a monument to the missing. Almost all those buried or commemorated in both cemeteries fell during the fighting in 1918, many of them at Belleau Wood.

David T. Zabecki

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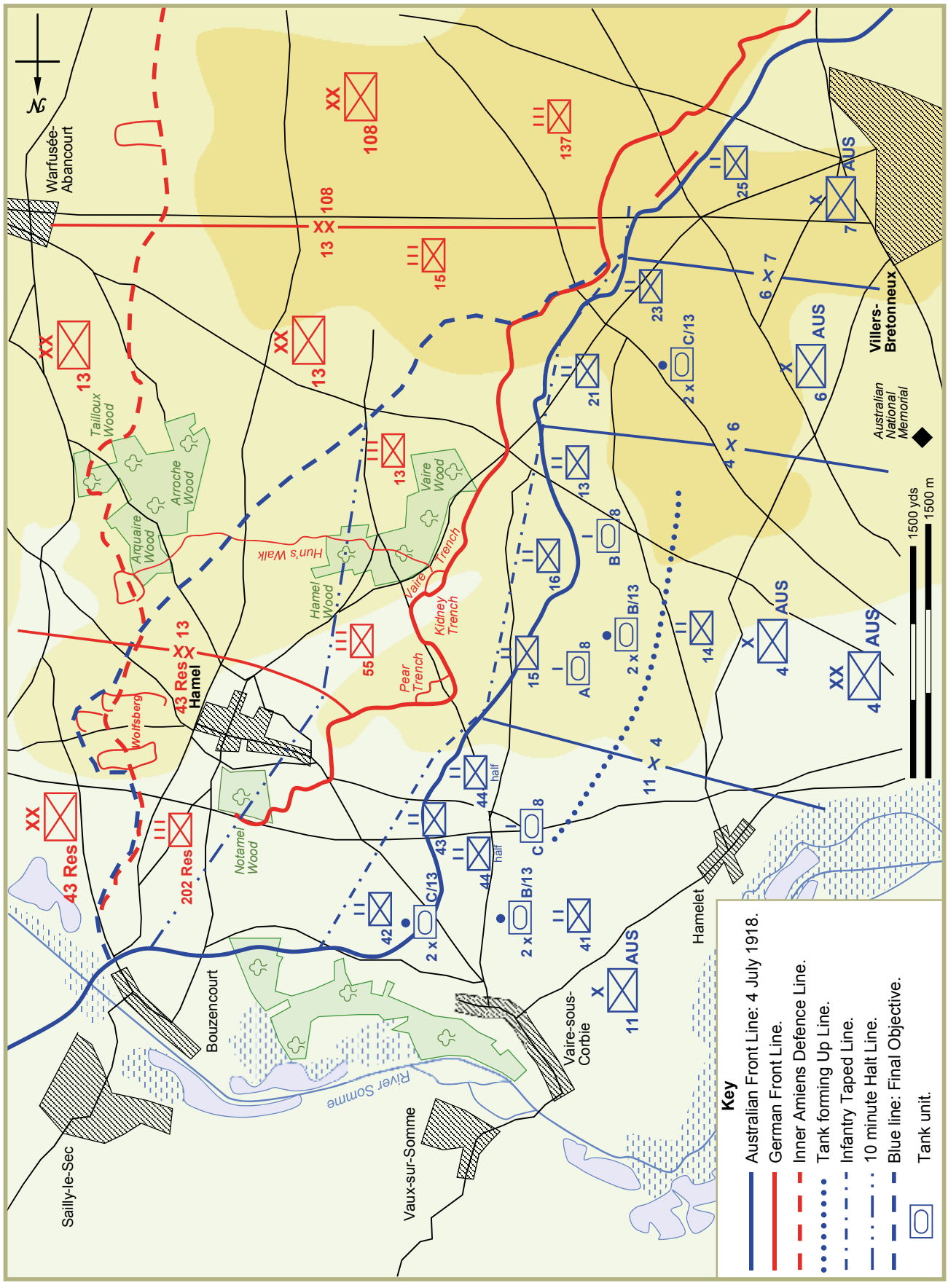
24. The Battle of Hamel
(4 July 1918)

Description	American	German
Senior Commanders	General Sir Henry Rawlinson – British Fourth Army. Lieutenant General John Monash (later knighted) – Australian Corps. Major General Ewen Sinclair-Maclagan – 4th Australian Division.	General Johannes Georg von der Marwitz – Second German Army
Principal Forces Engaged	**British Fourth Army** Australian Corps: 4th Australian Division (reinforced) with four infantry companies, 33rd (U.S.) Division. **In support:** 5th British Tank Brigade: 60 Mark V and 4 supply tanks. 306 field and 302 heavy artillery pieces (divisional, corps and army artillery). 3 Squadron Australian Air Corps 8, 9, 101 and 205 Squadrons Royal Air Force	**German Second Army** XI Corps: 13th Division. 202nd Regiment, 43rd Reserve Division. **In support:** 247 field and 130 heavy artillery pieces able to bear on the Australian Corps area. An unknown number of aircraft entered the battle.
Context	The Battle of Villers-Bretonneux (24 April 1918) had blocked the German advance close to Amiens, a key communication node of the British Expeditionary Force (BEF). The pause between German offensives allowed the Allies valuable time for recovery, reorganisation and the mounting of some limited attacks.	Although the third of the great German offensives, Operation BLÜCHER (27 May – 5 June 1918)[1], had been held 70 kilometres north of Paris, Ludendorff had not abandoned his overall strategic plan to break the BEF. He planned first to pin down and wear down further the French, leading to the Second Battle of the Marne, 15 July – 6 August 1918.
Casualties	1380 including 176 American.	2000 killed and wounded (estimated).[2] 1605 prisoners; 177 machine-guns.
Consequences	The successful battle combined experimentation (see Fourth Army's after action report) and rehearsal of the 'all arms battle'. It generated confidence building throughout the Allied armies, leading to the victories of the Hundred Days.	While the regiments of the two divisions involved suffered heavy losses, the German commanders failed to respond to the new Allied tactics, doctrine and equipment. They would face the consequences at the Battle of Amiens on 8 August 1918 and thereafter.

[1] See Chapter 22.

[2] 'Probably the total German [dead and wounded] considerably exceeded 2,000.' Bean, p. 326.



Map 24.1 – The Battle of le Hamel, 4 July 1918

Introduction

Fourth Army's commander-in-chief, General Sir Henry Rawlinson, concluded in a paper in June 1918 that given the manpower problems facing the BEF, the offensive power of the infantry divisions had to be enhanced by an increase in machine-guns and in 'the numbers and function of tanks'.[3] The recent arrival of the Mark V tank with greater speed and manoeuvrability than its predecessor (the Mk IV) met this requirement. As a result of the failure of the tanks in support of the Australians at Bullecourt in April 1917, however, Rawlinson knew that he would have to convince these Dominion troops of the value of this improved weapon. A specially designed operation in their area around Hamel would not only meet this remit, but also act as a rehearsal for future and larger operations. Furthermore, it would increase the depth of the defence of Amiens, and provide a firm base for any future offensive south of the river Somme. On 18 June 1918 Rawlinson tasked the newly appointed Australian Corps commander, Lieutenant General John Monash, and Brigadier General Anthony Courage, commander of the 5th British Tank Brigade, to prepare a combined plan of attack.

Ground, Deployment and Plan

The German defences around Hamel were based on the Hamel and Vaire Woods, and the village of Hamel with two strong points, Kidney and Pear Trenches, linking them. Although these defences consisted of three poorly wired shallow trenches or just shell holes with no shellproof shelters in the front trenches, the depth positions incorporated the former French Inner Amiens line, including the Wolfsberg strongpoint just east of Hamel. 202nd Regiment of 43rd Reserve Division and 13th Division faced 4th Australian Division's attack. This apparent concentration of force on a limited frontage of six and a half kilometres, however, masked the low battalion strengths in each of the four German infantry regiments. Furthermore, the doctrinal requirement for defence in depth weakened their front line. As a result, the German defence was based largely on their numerous machine-guns. Through 'peaceful penetration' (infiltration attacks), the Australians had already demonstrated the potential weakness of their opponent's defence. The attack would be carried out through waist-high wheat and clover fields.

The initial plan was based on that of Cambrai: a surprise attack covered by smoke screen, led by a lifting barrage after Zero Hour followed by the lead tanks clearing the wire, and then the remaining tanks and infantry assaulting in three echelons. Although Monash described the plan as 'primarily a Tank operation', this understates the very significant role of the artillery (306 field and 302 heavy guns, from a combination of Australian, British and French batteries), which achieved a greater density than at either Cambrai or Amiens, in comparison with the 60 Mark Vs and four supply tanks involved. Not only were the German defences heavily pounded, but, as had become normal practice in the BEF, there was also very extensive and effective counter-battery fire – provided in this battle by two-thirds of the heavy artillery. As a result of Australian objections, however, the artillery support plan was changed to a rolling barrage directly in front of the infantry advancing at 100 yards every three minutes with the tanks following the infantry. This arrangement proved unsatisfactory. During subsequent attacks, tanks normally advanced in front of the infantry and just into the barrage. This important change, which took into account the ability of armoured vehicles to withstand field artillery splinters or shrapnel, ensured that the German defences could be stormed as demonstrated in later battles.

There was also a significant reduction in infantry density from previous offensive operations: the 500 yards attack frontage of a battalion at Cambrai was now extended to over 1,000 yards at le Hamel, a trend maintained over the Hundred Days campaign of 1918 and into the Second World War. Approximately 1,000 men from four infantry companies of the 33rd (United States) Division, a National Guard formation from Illinois, rounded out the experienced all-volunteer Australian infantry battalions, which had already been augmented by men from other Australian units.[4] So reinforced, 4th Australian Division was to advance in three waves supported by tanks: the first wave advancing to the Ten Minute Halt Line (see map); the second wave to the Blue Line, the final objective; with a third wave in support. 6th Brigade would provide a flank guard south of Vaire Wood. In the centre, 4th Brigade was required to clear the Vaire and Hamel Woods and to seize the Kidney and Pear Trenches. In the north, 11th Brigade would clear Hamel and then capture the former French Inner Defence Line, including the Wolfsberg. As was to be expected from Monash, the preparations for battle were meticulous: a series of conferences developed the detail for the plan; the infantry and tanks trained and rehearsed

[3] National Army Museum (NAM) Rawlinson Papers 5201/33/77, quoted in Prior and Wilson, p. 291.

[4] Originally ten U.S. Army infantry companies were meant to be involved in the attack, but General John Pershing, commander-in-chief of the American Expeditionary Force, recalled six of these shortly before the attack. In the event, Companies C and E, 131st Infantry and Companies A and G, 132nd Infantry were committed. During the battle, Corporal Thomas A. Pope (E/131st) won the Medal of Honor. Pershing was irate that even these four companies had been committed, presumably because they went into battle not under overall American command. (The Editor is grateful to David T. Zabecki for providing this additional detail on U.S. Army forces.)

8th Tank Battalion Mark V H52, one of three tanks disabled during the fight for Hamel with Captain Morian's Tricolour flying from the house in the background. © The Tank Museum

closely together; the infantry were fed a hot meal and received a tot of rum the night before the attack; and the move up of the tanks to within 1,000 of the front line was covered by aircraft noise.

Air Support

A sophisticated and largely novel plan of air support was drawn up and executed. During the night before the battle, aircraft of 101 Squadron RAF bombed German billeting areas. On the day of the attack, 205 Squadron RAF bombed ammunition dumps and bivouac areas. While 3 Squadron Australian Air Corps provided direct support to the attacking infantry, 8 Squadron RAF co-operated with the tanks. 9 Squadron RAF assisted both infantry and machine-gun teams with parachute drops of small arms ammunition at pre-arranged points on the battlefield.[5]

The Battle

The final move of the tanks was covered by the daily 'defensive' harassing barrage, which in previous days had included gas. Expecting the same, many German infantrymen donned their respirators on the day of the Australian attack, although 10% smoke rather than gas was employed. Zero Hour was at 0310 hours when there was only about twenty yards' visibility. There was insufficient light for the tanks: in the subsequent battle of Amiens, Zero Hour was delayed relative to sunrise. The barrage proved mainly effective although it was difficult to follow due to the dust. The assault to the 10 Minute Halt Line was successful, with the tanks providing useful support in the clearance of Vaire and Hamel Woods. In comparison, the Pear Trench, expertly sited on a reverse slope, proved a tougher objective. A combination of an inaccurate barrage here and lost tanks made it a difficult fight. None the less, the trench was swiftly captured.[6]

The 10 Minute Halt Line was reached at 0328 hours: at 0351 the second wave attacked towards the Blue Line. With daylight the tanks were now advancing within the fall of the supporting artillery fire and in front of the infantry, who no longer had to 'hug' the barrage. The surviving German defenders were now faced with the more nimble Mark Vs or the infantry's bayonets. After a hard fight, the Wolfsberg was taken and the Blue Line reached everywhere by 0435. A protective barrage was brought down, and the troops were resupplied by four supply tanks and by aircraft. German aircraft only entered the fight at about 0930 in the morning, by which time the Australian and American infantry were consolidating on their objectives.

[5] H.A. Jones, *The War in the Air – Being the Story of the Part Played in the Great War by the Royal Air Force,* Volume VI, 1918 (Oxford: Clarendon, 1934) p. 416.

[6] One of the two Victoria Crosses of the battle was awarded to Private Henry Dalziel, a Lewis gunner, in recognition of his valour during the assault of Pear Trench.

8th Tank Battalion Mark V in Hamel.
© The Tank Museum

Commentary

Following the battle, Fourth Army produced a detailed after action report, which was made readily available as a BEF training pamphlet.[7] It concluded that 'the success of the attack' was due to:

- The care and skill as regards every detail with which the plan was drawn up by the Corps, Division, Brigade, and Battalion staff, tanks and R.A.F.
- The excellent cooperation between the infantry, machine-gunners and artillery.
- The complete surprise of the enemy …
- The precautions … by which no warning was given to the enemy …
- The effective counter-battery and accurate barrage.
- The skill and dash with which the tanks were handled and the care taken over details in handling them up to the start line.
- Last, but most important of all the skill, determination, and fine fighting spirit of the infantry carrying out the attack.

Although relatively small in scale, and quite apart from the American involvement and the great learning benefit the battle provided not only for the BEF but also for the Allies more generally, the success at le Hamel remains very significant for Australia. One national author, for example, has sub-titled his book on the action as the 'Australians' finest victory'.[8] While other historians might point rather to the subsequent battle of Amiens, the importance of the success at le Hamel was not lost on the French prime minister, Georges Clémenceau. When visiting the headquarters of the 4th Australian Division on 7 July 1918, he declared:

> I have come here just for the very purpose of seeing the Australians. I am going back tomorrow to see my countrymen and tell them: 'I have seen the Australians. I have looked into their eyes. I know that these men who have fought great battles beside us in the cause of freedom will fight alongside us again until the cause of freedom for which we are battling is safe for us and our children.' [9]

[7] S.S. 218.J., *Notes Compiled by G.S. Fourth Army Operations by the Australian Corps against Hamel, Bois de Hamel, and Bois de Vaire, 4th of July, 1918.*

[8] John Laffin, *The Battle of Hamel: The Australians' Finest Victory* (East Roseville NSW: Kangaroo Press, 1999).

[9] Quoted by Charles Messenger, *The Day We Won the War: Turning Point at Amiens 8th August 1918* (London: Weidenfeld & Nicolson, 2008) p. 23.

The battlefield today: left (skyline) – Hamel and Vaire Wood; right – Hamel village. © Nicholas Hutchings

The Battlefield Today

The ground has changed relatively little since 1918. The Australian Corps Memorial Park of le Hamel is located just east of the eponymous village and on the site of the Wolfsberg strong point. It provides not only a series of introductory information boards, but also an excellent panoramic view of most of the battlefield. The tower of the Australian National Memorial at Villers-Bretonneux (five kilometres' distant to the west-southwest) can be seen on the horizon between Vaire Wood and Hamel.

Geoffrey Vesey Holt

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The Australian Memorial at Hamel. © Nicholas Hutchings

25. The Second Battle of the Marne
(15 July – 6 August 1918)

Description	Allied	German
Commanders-in-Chief	Allied General in Chief, General Ferdinand Foch French Commander-in-Chief, General Philippe Pétain	German Commander-in-Chief, General Erich Ludendorff
Principal Forces Engaged	**Allied Armies** Central Army Group – General Émile Fayolle Tenth Army – General Charles Mangin Sixth Army – General Jean-Marie Degoutte Ninth Army – General Henri de Mitry Fifth Army – General Henri Berthelot Fourth Army – General Henri Gouraud I (U.S.) Corps II (Italian) Corps XXII (British) Corps	**German Armies** Crown Prince Army Group – Crown Prince Wilhelm of Prussia Ninth Army – General of Infantry Johannes von Eben Seventh Army – Colonel-General Max von Boehn First Army – General of Infantry Bruno von Mudra Third Army – Colonel-General Karl von Einem
Context	The Allies, having absorbed the last of the great German spring offensives, prepared a surprise counter attack. This will be the first French offensive launched without an extensive artillery preparation but with copious numbers of tanks.	The last major offensive is expected to enlarge the Marne salient around Reims and put the Allies further onto the back-foot.
Casualties	French: ca. 197,000 United States: ca. 12,000	ca. 150,000
Consequences	Despite rapidly slowing down and thereafter becoming a rather measured advance, the offensive was the beginning of the end for the German army. From this point onwards, it was forced on to the defensive and was unable to conduct any further major offensive action against the Allies.	A major blow to the German army on the Western Front. The fact that the French (with Allied support) had been able to launch an army group-sized offensive without German intelligence discovering its preparation was a significant indication of growing French military proficiency.

Introduction

The series of successful German operations during their 1918 spring offensives had left the German army in some dangerously exposed positions across the Western Front, in particular in what became known as the Marne Salient. German offensives against the French had pushed as far south as Château-Thierry, creating a large indentation in the French lines that was close enough to Paris to constitute a serious danger to the French capital. The city of Reims remained in French hands and now became the focus of German attention.

The German commander-in-chief, Erich Ludendorff, ordered a two-pronged assault on Reims: from the east, with the German First and Third Armies; from the west, Seventh Army; together with support from the Ninth Army (stationed to the north-west). The Germans committed over 40 divisions to the attack. Facing them respectively were Jean Degoutte's Sixth Army, with its headquarters at Épernay (south-west of Reims), and Henri Gouraud's Fourth Army with its headquarters at Châlons-sur-Marne (south-east of Reims).

The German offensive began on 15 July 1918 with only the German Seventh Army making progress; the German First and Third Armies' attacks on the French Fourth Army stalled almost immediately. Two factors contributed to their failure: first, Allied intelligence had identified that this grouping represented the likely German attack force; secondly, Gouraud had meticulously prepared the French positions in depth. In addition, there was an unpleasant surprise for the German assault infantry when the Allies launched a spoiling artillery barrage on the German lines before the German artillery had even started its preparatory fire on the French positions. However, this defensive success did not prevent the Germans from making progress against French Fifth Army, which had insufficient time to prepare its defensive positions to the same extent as Fourth Army. By the evening of 15 July, the Germans had crossed the river Marne near Dormans on a front of 14 kilometres and penetrated the French lines to a depth of over six kilometres. Significantly, both the crucial positions at Château-Thierry (largely defended by American troops) to the west, and Reims to the east, were still held by the Allies.

The operational situation was now propitious for Foch to launch his long-planned counter-offensive on the over-extended German armies in the Marne area. In June, he had drawn the French army's commander-in-chief Philippe Pétain's attention to the key importance of the major rail junction at Soissons, which was by mid-July supplying the German Ninth and Seventh Armies all the way down to Château-Thierry. While the German effort (and attention) was focused around Reims and in the east of the Marne Salient, its western face was left vulnerable. Past experience of poor French operational security had led German commanders erroneously to assume they would be alerted to any Allied build-up in plenty of time to shift forces to that sector of the front.

The Ground

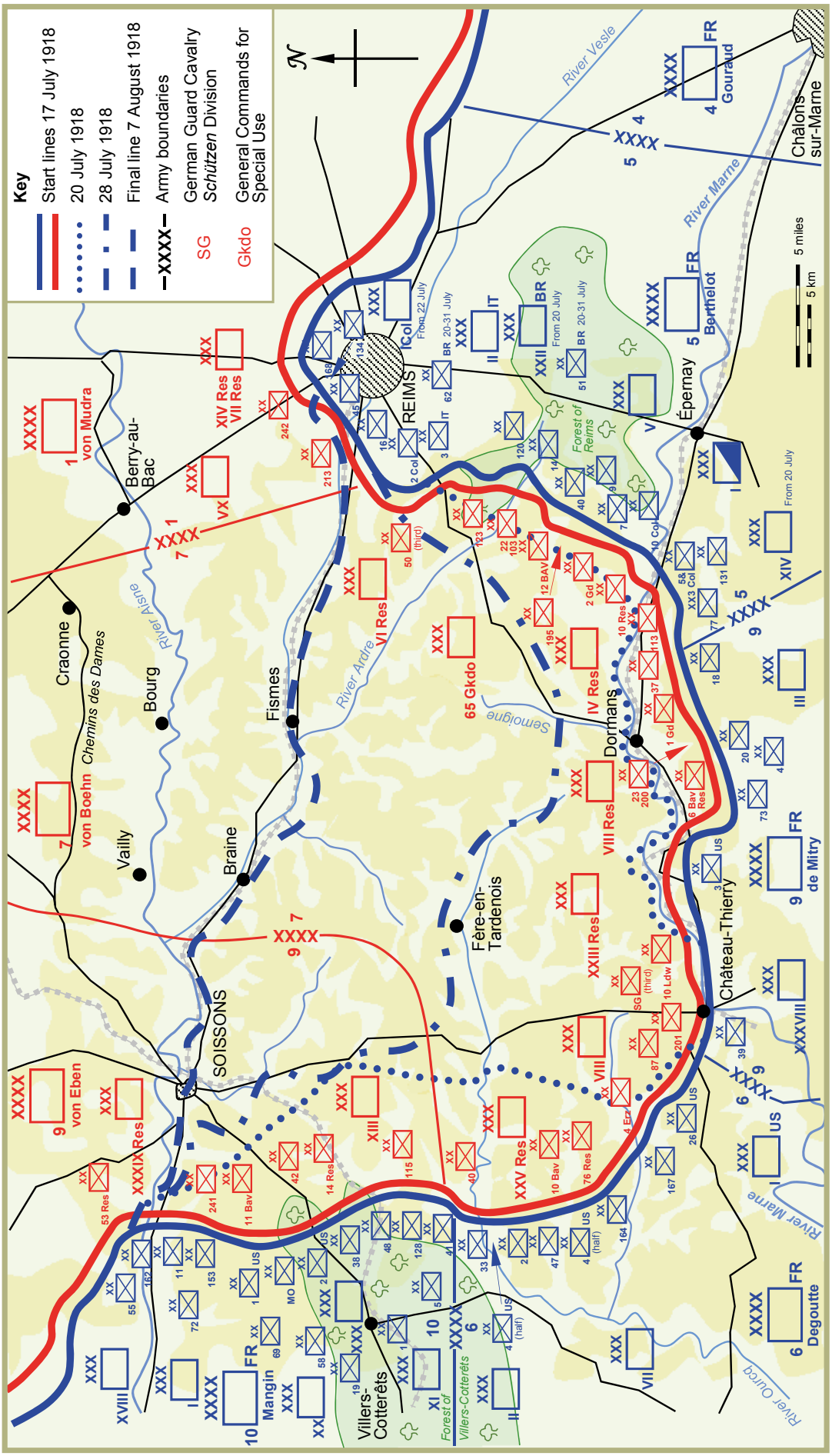
The ground that the Allies intended to attack over was in most places good going, as it consisted of gentle slopes and had not been subject to much heavy-artillery fire, thus leaving it relatively unbroken by shell holes. A series of large ravines across the battlefield, with steep slopes that were thickly wooded, however, presented a serious obstacle to movement and direct fire support. General Charles Mangin, commander of Franco-American Tenth Army stated in orders that his troops should 'avoid the ravines', but this was simply not possible.

Planning and Deployment

General Mangin had been assembling his formations quietly in the Forêt de Retz while the German offensive around Reims was unleashed. Mangin's army was made up of specially picked French divisions, along with two very large U.S. divisions, the latter being each nearly the size of a French corps. A sizeable reserve (an early form of mobile group) was given to Tenth Army, consisting of French 2nd Cavalry Corps (2e Corps de cavalerie – 2nd CC) and a motorized force that was created to support it. Two infantry groupements (battalions) carried by lorry were formed, one a mix of French and U.S. infantry, the other entirely French. Five French 75mm groupes (artillery companies) were attached; they were to begin the battle firing in the opening barrage before limbering-up and joining the reserve grouping. Additionally, 2nd CC received a dedicated fighter squadron in direct support. In army reserve (but not under control of 2nd CC) were three Renault light tank battalions.

The main thrust of Tenth Army's attack towards Soissons was to be mounted by XX and XXX Corps. The quantity of fire support available to XX Corps alone gives an indication of how well-armed the French were at this stage of the war: it had 276 field guns, 96 howitzers, 76 heavy guns and 50 aircraft available, along with four medium-tank battalions.

Facing the French Tenth Army was the German Ninth Army, which contained ten infantry divisions. The majority of



Map 25.1 – The Second Battle of the Marne, 15 July – 6 August 1918

these formations was either of poor quality or very under-strength: the troops were also poorly supported and prepared. Most of the German heavy artillery in the Marne Salient was being moved north for a planned German offensive in Flanders (Operation HAGEN). In addition, there had not been enough time to fortify the German positions in anything but a rudimentary fashion. The one tactical advantage Ninth Army possessed was its ample stock of machine-guns, which the Germans were expert at deploying in inter-locking fields of fire. The frontage for the assault divisions of Tenth Army was approximately two kilometres each, while individual German divisions defended sectors from four to five kilometres apiece.

This battle would be the first time the French attempted such a large-scale attack without prior artillery preparation, with tanks used en masse as a substitute for artillery fire. At Soissons, the tanks would attack with the first wave of assaulting infantry, just as an intensive artillery barrage was unleashed. The French had a total of 540 light tanks and 240 medium tanks available on 17 July 1918, although breakdowns would prevent many coming into action on 18 July. Most of the tanks were concentrated in Tenth Army. The medium tanks would advance in front of the first infantry assault units, with the light tanks held in the army reserve, ready to exploit into the enemy's depth. The jumping-off time of 0435 hours was chosen so that the tanks could get into action in semi-darkness. There was to be a heavy concentration of smoke shells.

While the Tenth Army on the north-western flank would form the operational level main effort of the Allied counter-offensive, the Sixth, Ninth and Fifth Armies to the south and east would play supporting roles, albeit those that would require some heavy fighting. Accordingly, they received a number of the medium and light tank units.

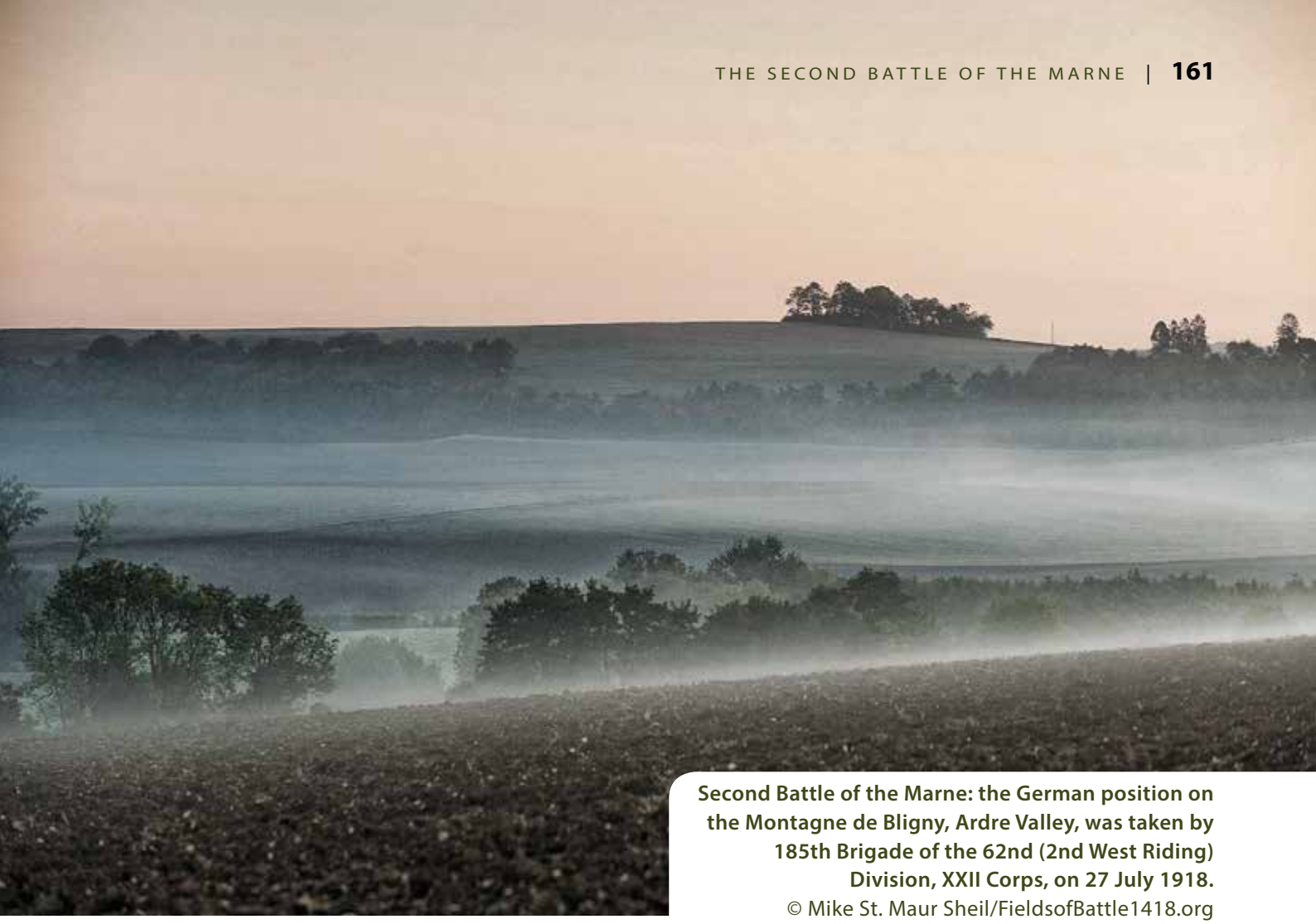
The Battle

The counter-offensive started with an artillery barrage on Sixth Army's front at 0400 hours on 18 July 1918, followed by Tenth Army's barrage 45 minutes later and one in Ninth Army's zone at 0500 hours. This spread of fire in time and space momentarily prevented the Germans from recognising where the French main effort would lie. The Allies achieved total tactical surprise: there was a thick mist over the battlefield which, combined with a heavy Allied smoke barrage, enabled the French and American infantry rapidly to storm the forward German positions. For example, elements of 2nd U.S. Division advanced so quickly that all of the opposing German division's artillery was overrun by 0830 hours. Across most of Tenth Army's front, the infantry had advanced several kilometres within the first hour. By the end of the day, Allied troops had penetrated in some places over eight kilometres into the German positions. As expected, the other French armies had made steady but not spectacular progress, their main objective being to fix the German formations in front of them and so prevent reinforcements being sent to meet Tenth Army's attack.

Pétain arrived in the early evening of 18 July at Tenth Army headquarters and declared that the operation was a 'great success.' Mangin asked for additional troops to continue the offensive but Pétain said there was none to give him. The army commander countered by arguing that the French were on the verge of decisive results, which would be jeopardised if the attack did not continue at the same pace. Pétain, however, did not relent. Therefore, Mangin was forced to restart the offensive the next day with fewer troops and tanks than the previous day – but without the essential element of surprise. Although the French made some headway on 19 July, the battle now became one of heavy fighting with a steady rather than rapid advance, as the Germans retreated northwards towards the Aisne River.

The German Crown Prince ordered a general withdrawal from the Marne salient on 24 July, against considerable opposition from Ludendorff. There followed a slow but inexorable advance by the Allied armies, characterised by very skilful defensive fighting on the German side. By 6 August 1918, the Germans were well established along the Aisne and Vesle rivers and this is where the Allied forces stopped, the Second Battle of the Marne now ended.

The Allied forces engaged in Second Marne reflected how integrated the Allies were by this stage of the war; aside from the two U.S. divisions already mentioned fighting on Tenth Army's front, in Sixth Army the 4th U.S. Division was split between French II and VII Corps, with French 167th Division attached to U.S. I Corps. Fifth Army began the operation with the Italian II Corps attached, which was replaced by the British XXII Corps on 22 July. The British corps remained with Fifth Army until 31 July, when it was returned to Haig's command, part of the preparations for the forthcoming offensive at Amiens. The most international unit was the Moroccan Division in the French XX Corps, which consisted of the Foreign Legion regiment, the Russian Legion (battalion size), two battalions from Senegal and one from Madagascar, as well as Algerian and Moroccan regiments.



Second Battle of the Marne: the German position on the Montagne de Bligny, Ardre Valley, was taken by 185th Brigade of the 62nd (2nd West Riding) Division, XXII Corps, on 27 July 1918.
© Mike St. Maur Sheil/FieldsofBattle1418.org

Casualties

During the Second Battle of the Marne, the Franco-American armies took 609 German officers and 26,413 men prisoner between them, of which 8000 were taken by the Americans, and 1600 by the British. The Allies also captured approximately 612 artillery pieces, 221 *Minenwerfer* (mortars) and 3330 machine-guns. French losses for the period of the battle were 499 officers and 11542 men killed, 1870 officers and 68396 men wounded, with 170 officers and 12688 men missing. There are no accurate casualty figures for the German army in this battle, although some estimates have been made that these were approximately 150,000. The Americans lost approximately 12,000 men.

Commentary

Although the Soissons operation represented a great tactical and indeed operational level success for the Allies, it also illustrates a number of inherent problems with offensive operations in the First World War. The main difficulty for the Allies was how to maintain the initial fast tempo of attack before the Germans could consolidate a new defensive line and then counter attack. A key problem at Soissons was that the German defence, already skilfully handled, became tougher as the Germans withdrew towards their prepared rear positions.

Another significant factor was that the German reserves could be moved to the front much faster than those of the Allies. Although a thunderstorm on 17/18 July had helped mask Allied preparations for the offensive, it subsequently wrecked the roads, which had a great impact on the movement of Allied reserves and supplies. One participant described the roads as 'veritable rivers.' The only main road, the route nationale from Soissons to Villers-Cotterêts (and then to Paris) crossed the battlefield diagonally and was therefore of little military use. The other roads, although crossing the battlefield west to east and thus being along the Allied axis of advance, were minor and not suited to the large amount of military traffic that was required, as well as being vulnerable to bad weather. This difficulty with the road network was compounded by the fact that it was necessary for some of the divisions from both Tenth and Sixth Armies to cross the river Savières, which ran parallel to the route nationale for much of the battlefield.

Nonetheless, the counter offensive operation at the Second Battle of the Marne was a stunning success for

the Allies; American historian Robert Doughty describes the battle as one of the most important of the war. In less than three weeks, the Germans had been completely dislodged from the Marne Salient, reducing the front by 45 kilometres. The outcome of the battle caused a serious dip in the morale of the German army, with a corresponding rise in that of the Allies.

The Battlefield Today

Although the area of the battle is considerably more built-up than in 1918, it is still possible to get a good feel for the terrain to the west and south-west of Soissons where French Tenth Army was engaged, particularly the ravines that cross the battlefield. The town of Château-Thierry to the south has many sites in its immediate area connected with the U.S. Marine Corps and to the north near Fismes there is a striking memorial bridge over the Vesle River to the U.S. 28nd Division.

Tim Gale

Further Reading

Robert A. Doughty, *Pyrrhic Victory: French Strategy and Operations in the Great War* (London: Harvard University Press, 2005)

Michael S. Neiberg, *The Second Battle of the Marne* (Bloomington: Indiana University Press, 2008)

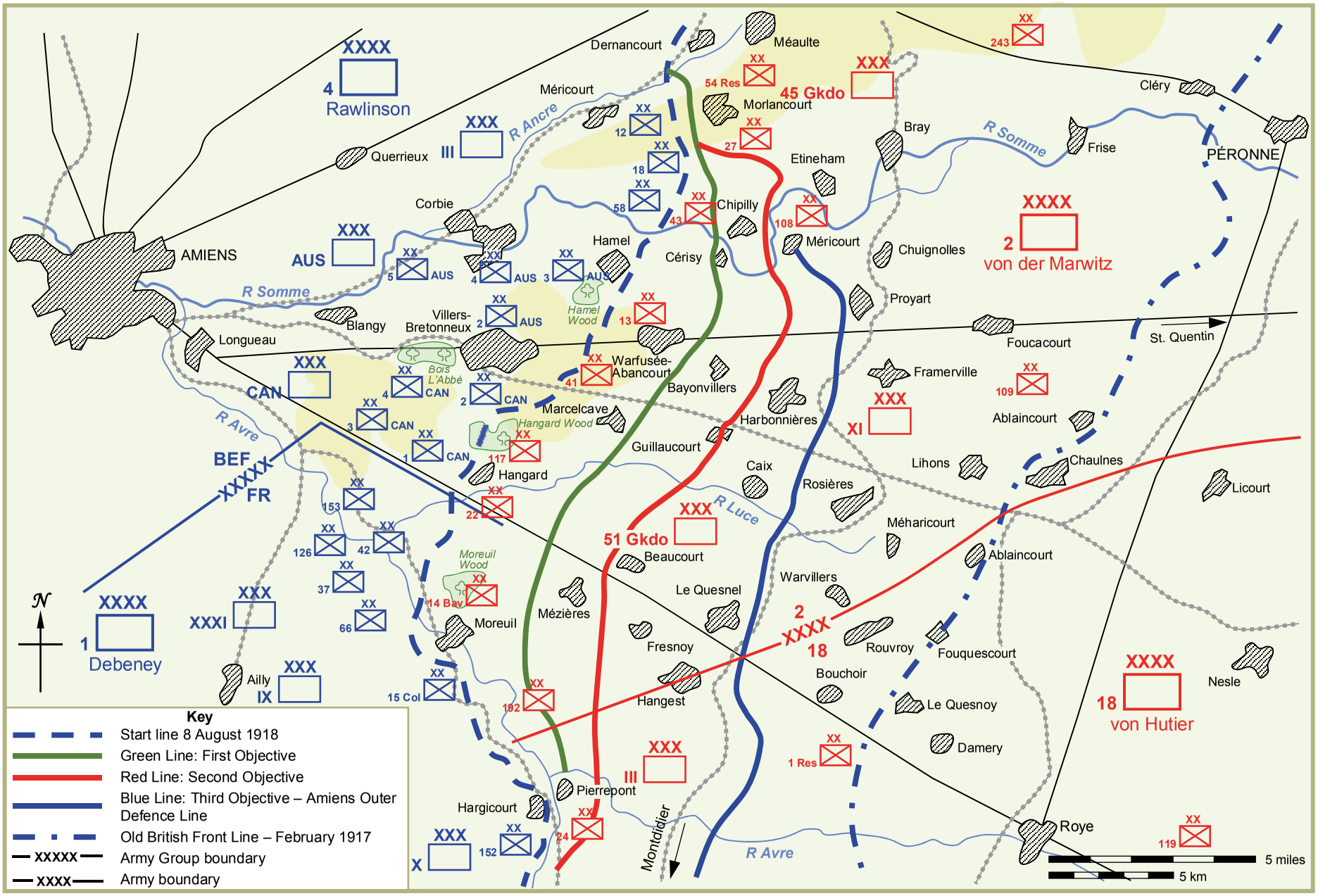
This battle is covered in depth in the French, British (1918, Volume 3) and German Official Histories.

Second Battle of the Marne: Quentin Roosevelt aged 20, youngest son of former President Theodore Roosevelt, served in 95th American Squadron and was shot down on 14 July 1918. Memorial at the aircraft crash site. © Mike St. Maur Sheil/FieldsofBattle1418.org

26. The Battle of Amiens

(8 – 11 August 1918)

Description	Allied	German
Strategic Commanders	Marshal Ferdinand Foch (Allied General-in-Chief)) Field-Marshal Sir Douglas Haig (C-in-C, BEF)	General Erich Ludendorff (First Quartermaster-General)
Operational Commanders	General Sir Henry Rawlinson (British Fourth Army) General Marie-Eugène Debeney (French First Army)	Crown Prince Rupprecht of Bavaria (Army Group Commander) General Georg von Marwitz (Second Army) General Oskar von Hutier (Eighteenth Army)
Principal Forces Engaged	**British Fourth Army** III Corps: 12th, 18th, 47th, 58th Divisions & U.S. 33rd Division Australian Corps: 1st, 2nd, 3rd, 4th & 5th Australian Divisions Canadian Corps: 1st, 2nd, 3rd & 4th Canadian Divisions Cavalry Corps: 1st, 2nd & 3rd Cavalry Divisions **French First Army** IX Corps: 3rd, 15th Colonial & 152nd Divisions X Corps: 60th, 166th & 169th Divisions XXXI Corps: 37th, 42nd, 66th, 126th & 153rd Divisions II Cavalry Corps: 2nd, 4th & 6th Cavalry Divisions **Royal Air Force** V & IX Brigades; elements I, III, X Brigades RAF	**Second Army** XI Corps 13th, 41st, 43rd Reserve & 107th Divisions LI Corps: 14th Bavarian, 109th, 117th, 192nd & 225th Divisions LIV Corps: 27th, 54th, 233rd & 243rd Divisions **Eighteenth Army** III Corps: 24th, 25th Reserve, 1st Reserve & 79th Reserve Divisions IX Corps: 2nd, 11th & 82nd Reserve Divisions I Bavarian Corps Alpenkorps 121st Division
Context	Allies seize the initiative on Western Front. Major British/French/Canadian/Australian offensive near Amiens.	As a consequence of the advances in the spring, the Germans hold an untenable salient defended by understrength formations.
Casualties	9,000	27,000 men and 450 guns
Consequences	Eight-mile (13 kilometres) advance and crushing Allied victory. Arguably, the battle that wins the war. Initiative on Western Front passes to Allies, who never relinquish it. The beginning of the 'Hundred Days' of Allied offensive victories, which lead to German capitulation in November.	Ludendorff famously calls it the 'Black Day of the German Army'.



Map 26.1 – The Battle of Amiens, 8-11 August 1918

Introduction

The last of Ludendorff's 1918 offensives was launched in the Soissons area on 15 July. Foch's counterattack on 18 July halted the Germans and threw them back (Second Battle of the Marne). In this battle the Germans lost the initiative; it was now up to the Allies to seize and exercise it. They did so in dramatic fashion at Amiens on 8 August 1918. British Fourth Army, which included the powerful Canadian and Australian Corps fighting side-by-side, as well as a corps from the United Kingdom, together with the French First Army (four corps) decisively defeated the German defenders. This marked the beginning of the 'Hundred Days' or 'Advance to Victory' that led to German capitulation in November 1918.

On 4 July 1918, 4th Australian Division with four companies of U.S. 33rd Division (Fourth Army) carried out a model limited operation at Hamel. In 90 minutes Hamel was captured along with 1,470 prisoners taken for the losses of fewer than 1,000 men. A pamphlet on the lessons of the battle was rapidly distributed to the rest of the BEF. The methods used at Hamel underpinned the Battle of Amiens the next month. Rawlinson, with Haig's permission, planned for a further advance. The two men agreed that the Canadian Corps, the single most powerful and freshest formation in the BEF, would be brought south to the Amiens area where it would fight alongside the other élite Dominion corps, the Australians. British III Corps would act as a flankguard to the north. Foch placed French First Army temporarily under Haig's command. This Army would attack on Fourth Army's right (southern) flank.

Planning and Deployment

On 25 July 1918 Foch and Haig agreed to the attack taking place 'as soon as possible'. Foch's directive indicated that the Allied offensives would seize the initiative and clear key railway lines to prepare the way for future operations. The advance was to aim for Roye, about 25 miles (40 kilometres) southeast of Amiens. Haig and Foch deliberately kept the British government in the dark about the impending attack. Secrecy was paramount, and the fewer people in London who knew about the operation the better. Haig also seems to have feared that if the government had advance notice of a major new offensive they would interfere on the principle of 'no more Passchendaeles'. Rawlinson, in keeping with his more cautious 'bite-and-hold' philosophy, planned for a limited advance on a ten-mile (sixteen kilometres) front of six miles (10 kilometres) up to the Outer Amiens Defence Line. Except for the greater ambition of the bite, this was similar to Rawlinson's approach in 1916 at the Somme. But in August 1918 the defenders were in a much weaker position in every way than in 1916; and, as crucially, the BEF was now a vastly more sophisticated and proficient instrument of war.

By contrast, the state of the German Second and Eighteenth Armies holding the Amiens sector was parlous. German divisions had a rifle strength of no more than about 4,000 infantry each, about 37,000 men in all. Morale was not high. By contrast, British and Australian divisions had about 7,000 rifles; Canadian divisions were much bigger, having around 12-13,000 infantry, and Allied morale ranged from good to excellent. On the flanks of British Fourth Army's attack, geography dealt the defenders a reasonable hand. To the north, there was the broken high ground of the Chipilly Spur, and to the south the marshy valley of the River Luce. However, in the critical central positions to be attacked by the Australians and Canadians, the flat ground offered few natural advantages to the defender, beyond some woods and villages somewhat inconveniently (from the defender's point of view) spaced out.

The defenders' problems were exacerbated by the complacency of German commanders. With no inkling that they were about to be attacked, there was little enthusiasm for speeding up the desultory strengthening of their generally rather poor positions, which in places were little more than a series of shell-holes, let alone the creation of new defences in the rear. An Australian Corps report of 1 August, based on intelligence gathered during a trench raid, stated 'new defence work...was "so haphazard as to lead to the conclusion that [it was] dictated entirely by local considerations and not by a general plan"'.[1] Neither did the Germans reinforce this sector.

As a result of a conference held on 5 August between Foch and Haig, the depth of the projected advance was extended 15 miles (24 kilometres) to Roye, reverting to the original aim. Haig has been much criticised for accepting this alteration, but Foch insisted on the change. GHQ's revised operation order smacks of 'consent and evade' (a deliberately ambiguous intent): the main change being an exhortation to advance as speedily as possible. Unlike in 1916, however, Rawlinson did not protest against the new objectives. As these objectives were so distant, existing artillery arrangements did not need to be disturbed. Probably Haig felt that Rawlinson needed to be prodded to take advantage of opportunities created by surprise, reflecting the C-in-C's operational concept of using mobile troops to expand and exploit initial tactical gains.

[1] Quoted in Robin Prior and Trevor Wilson, *Command on the Western Front* (Oxford, Blackwell's, 1992), p. 301.

An elaborate and successful deception plan combined with almost obsessive secrecy concealed the arrival of the Canadians on the Amiens front. A map prepared for Rupprecht's Army Group, dated 08.00 on 8 August, shows that Germans believed that the Canadian Corps was still concentrated around Arras. There was no preliminary bombardment or ranging shots: by this stage of the war, the Royal Artillery was able to shoot 'off' the map. Surprise was greatly to magnify the effect of the Allied attack on the weak German positions.

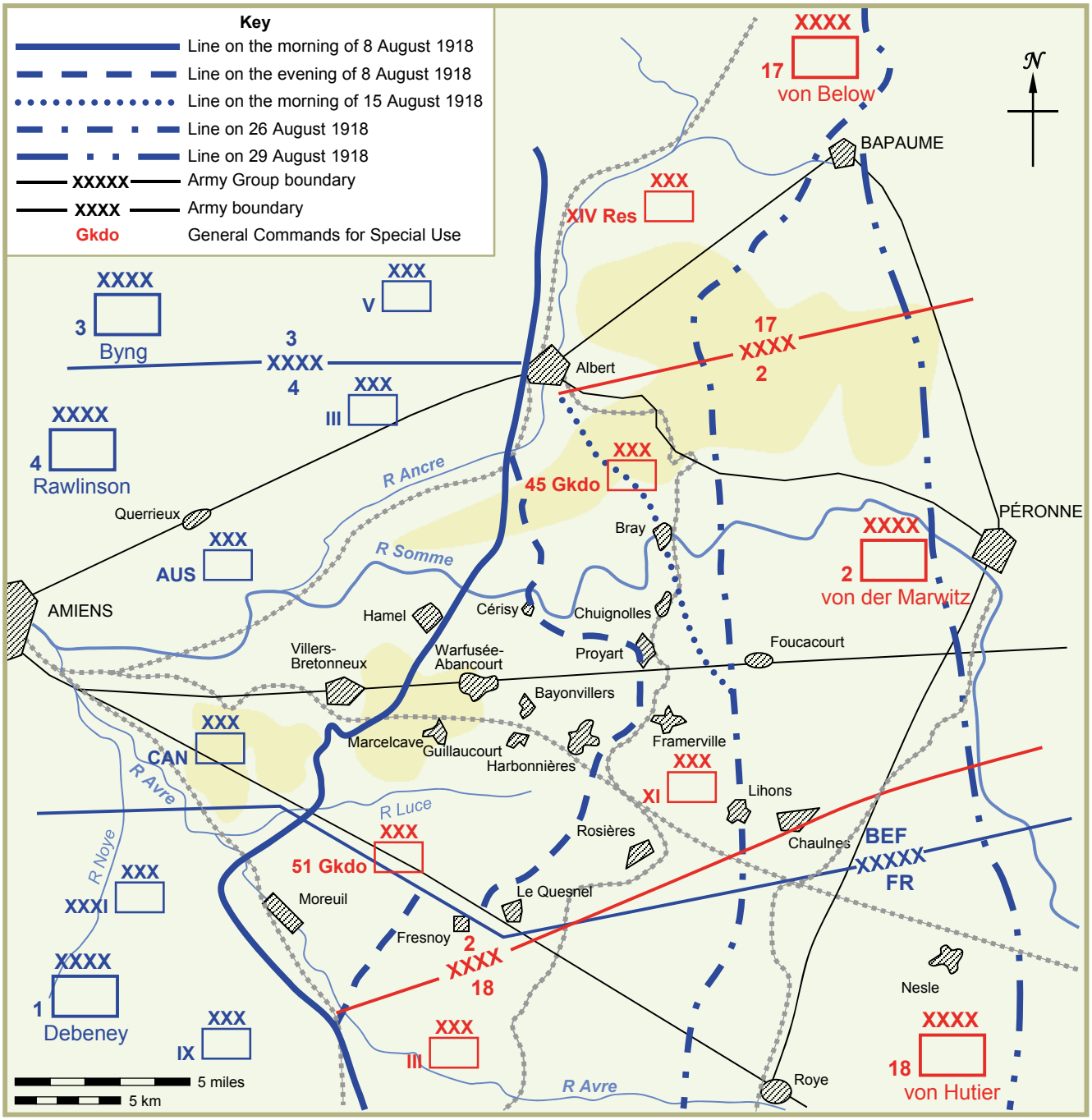
The Battle

The battle began at 0420 hours on 8 August. 700 artillery pieces fired 350,000 shells during the Amiens battle. No fewer than 504 out of 530 German guns had been identified before the attack. 450 heavy guns were used for counter-battery work, each with sufficient ammunition to fire four rounds every minute for four hours. German gunners were neutralised leaving their guns to be captured by the infantry advancing through the early morning fog, supported a highly effective creeping barrage and by 552 tanks – the battle of Amiens saw the greatest number of tanks being employed during the First World War.

Butler's III Corps – 18th (Eastern) and 58th (2/1 London) Divisions – advancing along the broken high ground (described by a Canadian historian as 'truly formidable'[2]) of the Chipilly Spur had a difficult task, multiplied by the paucity of armoured support (only one tank battalion) and the fact that a minor German attack on 6 August took some ground which had to be retaken on 8 August. Nonetheless, III Corps pushed forward two miles to take the German First Position.

Monash's Australian Corps – 3rd and 2nd Australian Divisions – and Currie's Canadian Corps – 2nd, 1st and 3rd Canadian Divisions – swept the German defenders out of the way and had captured the Green Line, the first

Canadian soldiers escort German prisoners through a communication trench. © NAM



Map 26.2 – The Battle of Amiens, 8-11 August 1918: Exploitation

objective, by approximately 0730 hours. The villages of Warfusée-Abancourt (on the Roman road), Marcelcave and Moreuil, the twin Hangard Woods and Rifle Wood were captured in the process. Even faced by fire from the flank, the Australian 4th and 5th Divisions and the Canadian 4th Division, forming the second echelon of the attacking force, then exploited through the captured positions and advanced about three miles (five kilometres) by mid-morning. Cavalry, armoured cars, and Whippet tanks pushed ahead of the infantry. By the end of the day, the two Dominion corps had taken their final objectives on the Amiens Outer Defence Line; their advance of as much as eight miles (thirteen kilometres) had exceeded Rawlinson's ambition. The contrast with the first day of the Battle of the Somme on 1 July 1916 could not have been greater.

Meanwhile, Debeney's French First Army attacked alongside Rawlinson's men and advanced up to five miles (eight kilometres). The French eliminated the Moreuil salient and crossed the River Avre. In the afternoon, the exploitation continued across the Santerre plateau. On 10 August the French expanded the attack in the south, advancing towards and astride Montdidier.

[2] S.F. Wise, 'The Black Day of the German Army: Australians and Canadians at Amiens, August 1918' in Peter Dennis and Jeffrey Grey (eds.), *1918: Defining Victory* (Canberra: Army History Unit, 1999) p. 16.

The German official monograph on the battle later summed up the disaster as follows:

> As the sun set on the battlefield of the Second Army on the evening of 8 August the greatest defeat which the German Army had suffered since the beginning of the war was an accomplished fact. The line-holding divisions between the Avre and the Somme, which had been struck by the enemy attack, were almost completely annihilated. The troops in the front line north of the Somme had also suffered seriously, as had the reserve divisions thrown in to the battle during the course of the day.[3]

Air Support

Fourth Army was supported mostly by V and IX Brigades of the RAF. Although the RAF was not fully integrated into Fourth Army's planning, air power played an important role in the battle. Domination of the airspace above the battlefield was vital to preserve the secrecy of the preparation for the offensive. Once the battle began, a three-phase plan unfolded. Initially, bombers attacked German airfields, although fog diminished the effectiveness of this operation, and then fighters prevented German aircraft from reinforcing the battle area. The next phase was the provision of close air support (CAS) and attacking targets of opportunity: the severe disruption of the counterattack of German 109th Division is one of many examples of the RAF's successes in the battle. Third, bombers attacked communication nodes – initially it was planned to bomb railway stations but in the afternoon the targets became the bridges over the River Somme. Attacks on these targets, however, failed and the RAF suffered heavy losses. Indeed, the Germans rapidly reinforced their aircraft in the area and the Allies enjoyed little more than air parity above the battlefield.

An indication of the comprehensive nature of the air support provided to Fourth Army is given in the following table[4] of V Brigade RAF's allocation of squadrons to tasks:

Commentary

The fighting continued until 11 August 1918, although with diminishing success for the Allies. Although Foch had wanted to continue the offensive in the Amiens sector, Haig, influenced by key subordinates, successfully argued to be allowed to switch the main effort to British Third Army's sector a few miles to the north. This marked the beginning of the rudimentary operational art that Allied commanders used to great effect in Hundred Days. Still reeling from Amiens, on 21 August the Germans were faced with another major and successful attack a little to the north, across the old 1916 Somme battlefield, launched by Byng's Third Army (the battle of Albert). This marked the beginning of continuous sequential offensives across the front.

Task	Northern Sector (III Corps)	Central Sector (Australian Corps)	Southern Sector (Canadian Corps)
Corps work [artillery co-operation & reconnaissance]	35 Squadron (Armstrong Whitworth F.K.8)	3 Squadron Australian Flying Corps (R.E.8)	5 Squadron (R.E.8)
Tank work [direct support to advancing tanks]	35 Squadron	8 Squadron (Armstrong Whitworth F.K.8)	8 Squadron
Support to Cavalry/Armoured Cars	Nil	Nil	6 Squadron (R.E.8)
Ammunition dropping [resupply to advancing troops]	9 Squadron (R.E.8)	9 Squadron	Nil
Smoke laying	Nil	9 Squadron	5 Squadron (R.E.8)
Ground strafing	48 Squadron (Bristol F.2 Fighter, two flights 80 Squadron (Sopwith Camel)	41 & 84 Squadrons (S.E.5) 201 Squadron (Sopwith Camel)	23 Squadron (Sopwith Dolphin 5F.1) 24 Squadron (S.E.5) 65 & 202 Squadrons (Sopwith Camel)

[3] Quoted by Charles Messenger, *The Day We Won the War: Turning Point at Amiens, 1918* (London: Weidenfeld & Nicolson, 2008) p. 143.

[4] Adapted from Messenger, p. 146.

SE5a aircraft of 85 Squadron RAF, June 1918 © AHB

The battle of Amiens (called Montdidier by the French) has a good claim to be the turning point on the Western Front. The effect of the battle was psychological as well as physical. 'August 8th was the black day of the German army in the history of the war', Ludendorff wrote later. 'This was the worst experience I had to go through … August 8th made things clear for both army Commands, both for the German and for that of the enemy'. He suffered a shock, verging on a nervous breakdown. Although pessimism ebbed and flowed in the German High Command for the remainder of the war, at best its members believed that they could hold out for some sort of compromise peace. The German military leadership, and an increasing numbers of their troops, recognised, however, that an outright victory over the Allies was no longer a realistic possibility. The fighting on 8 August 1918 demonstrated the maturity reached by the BEF's weapons system. In 1920, Lieutenant-General Sir John Monash wrote:

> …a modern battle plan is like nothing so much as a score for a musical composition, where the various arms and units are the instruments, and the tasks they perform are their respective musical phrases. Each individual unit must make its entry precisely at the proper moment, and play its phrase in the general harmony.[5]

While this description represents an idealised picture, which does not take friction into account, Amiens and subsequent operations did tend to follow this pattern. While the weapons system emerged in part as the result of experience of 1915-17, it is also noteworthy in 1918 the BEF had artillery and ammunition on a scale undreamed of in previous years, and a logistic system that was more effective and flexible than in the past. Aside from artillery, two pieces of advanced technology proved their worth at Amiens: the aircraft and the tank. Both pointed the way to future warfare. As historians have recently demonstrated, horsed cavalry, far from being a useless anachronism, also had its place as part of the weapons system on the 1918 battlefield, not least at Amiens.

The Battlefield Today

A visit to the Australian battlefield park at Hamel is very helpful to understand the 'blueprint' for Amiens: the interpretation aids are most useful. Moving on to the Amiens battlefield, a stand on the Chipilly Spur is a good place to appreciate the difficulties faced by III Corps. The initial phase of the Canadian attack can be viewed from the ridge north of the village of Hangard, which overlooks the German front line at Hangard Wood (separated into two: West and East). There are several CWGC cemeteries in the area, including Longeau British cemetery near Amiens. The memorial at Viz-en-Artois, about ten kilometres south-east of Arras, is significant in that it:

> …bears the names of over 9,000 men who fell in the period from 8 August 1918 to the date of the Armistice in the Advance to Victory in Picardy and Artois, between the Somme and Loos, and who have no known grave. They belonged to the forces of Great Britain and Ireland and South Africa; the Canadian, Australian and New Zealand forces being commemorated on other memorials to the missing. [6]

Gary Sheffield

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Gary Sheffield and Peter Gray (eds.), *Changing War: The British Army, The Hundred Days Campaign and the Birth of the Royal Air Force, 1918* (London: Bloomsbury, 2013)

[5] Sir John Monash, *The Australian Victories in France in 1918* (New edition, Imperial War Museum/Battery Press, 1993), p. 56.

[6] Quoted from http://www.cwgc.org/find-a-cemetery/cemetery/79200/VIS-EN-ARTOIS%20MEMORIAL accessed on 8 July 2014. The Viz-en-Artois memorial is a potential location to commemorate the Battle of Amiens, 8-11 August 1918, and the 'Hundred Days'.

27. The Meuse Argonne Offensive – America's Greatest Battle

(26 September – 11 November 1918)

Description	American	German
Commanders-in-Chief	General John 'Black Jack' Pershing	General der Artillerie Max von Gallwitz
Principal Forces Engaged	**American Expeditionary Forces (AEF)** First Army Second Army	**Group of Armies Gallwitz** Fifth Army Third Army
Context	The AEF attacked west of Verdun to threaten or seize the Sedan-Mézières rail link, which was a vital logistic artery of the German army. The AEF attack was the first of four major offensive operations launched by Allied forces in late September to overwhelm and defeat the German army in the West, and so end the war in 1918.	Facing a concentric series of attacks by the Allies, the Germans aimed to prevent an American penetration of their defensive network between Vauquois and Sedan. In so doing, they attempted to protect their vital lines of communications while blunting or defeating American attempts to break out into open warfare.
Casualties	122,063	~100,000
Consequences	Together with the other massive Allied blows, which forced the Hindenburg Line, the overwhelming size and force of the American attack in the Meuse Argonne region denied the Germans the opportunity to economise their forces in this sector. It triggered – as elsewhere – the commitment of German strategic reserve divisions in a desperate, but ultimately doomed, effort to contain the Allied general offensive.	Due to the shallowness of the line in the Meuse Argonne region, the German high command was forced to commit many of its reserve formations to prevent an American breakthrough. This limited German strategic options and contributed significantly to their final defeat, which was now only a matter of time.

Introduction

The Meuse Argonne Offensive was the United States' largest ever military campaign, representing the climax of its first deployment of an army outside North and Latin America.[1] The attack began on 26 September and ended with the Armistice on 11 November 1918. More than 1.2 million American soldiers and marines of the American Expeditionary Forces (AEF) participated in this offensive, leaving behind 120,000 casualties in its wake. The Americans committed twenty-two divisions to this operation, approximating to fifty British or French divisions of 1918.[2] To blunt the American attack, the Germans deployed more than forty of their divisions into the area, and more importantly, committed many of their strategic reserves to prevent a penetration of their lines.[3]

An Emerging Operational Concept

Following the success of the Second Battle of the Marne, Marshal Ferdinand Foch determined that the German army in the West had culminated. At that time, Allied

[1] Excepting the 1898 Spanish-American War, which included the deployment of a portion of the U.S. 300,000 man temporary field army to Cuba, and ~40,000 deployed to the Philippines (1899-1902). See Donald Dyal, *Historical Dictionary of the Spanish American War,* (Westport, Connecticut: Greenwood Publishing; 1996), pp. 21-23.

[2] An American division was more than twice the size of than their European counterparts in men, translating to about fifty-five French, British or German divisions.

[3] Charles F. Horn (ed.), *Source Records of the Great War,* Volume VI, (New York: National Alumni, 1923), pp. 401-402. These figures are taken by a joint report published by Field-Marshal Foch and General John J. Pershing.

politicians and military leaders thought that the war could only be successfully concluded in 1919 with the further build-up of United States forces[4] in Europe, and with the production of many more tanks and aircraft. Foch, however, sensed the opportunity to exploit German over-extension and weakness by going over to the attack without delay. Accordingly, on 24 July 1918, Foch invited Pétain, Pershing and Haig to his headquarters at the Chateau de Bombon to inform them of his intentions. He declared that: 'The moment has come to abandon the general defensive attitude forced upon us until now by numerical inferiority and to pass to the offensive.' Crucially, however, he added that 'this offensive—while not seeking a decision—should consist of a series of movements to be undertaken immediately'. Specifically, he directed that these actions should include the clearing of railway lines that were 'indispensible for the later operations of the Allied Armies'.[5]

It is important to note that during the Bombon conference neither Foch nor his subordinates envisaged any form of war-winning general offensive until 1919. Indeed, each of the three national commanders-in-chief present expressed serious misgivings about the limited but nonetheless ambitious operations Foch proposed for the summer of 1918. Yet, despite their concerns, Foch insisted that a series of attacks should be conducted in order to 'leave no respite to the enemy' and to set the conditions for an important offensive to be launched 'toward the end of the summer or during the autumn'.

During the following month a series of Allied offensive operations, starting with the highly successful Franco-British attack at Amiens and Montdidier (8-12 August)[6], not only demonstrated increasing Allied confidence and expertise in breaking through the enemy's defences, but also showed German cohesion and morale beginning to breakdown. The highly co-ordinated, relentless pressure by the British and French armies led to the Germans' fighting withdrawal to the Hindenburg Line. Within six weeks, the Germans had lost all their gains of the bitterly fought Spring offensives. Meanwhile, towards the end of August, Foch had already seen that conditions opening to undertake 'a concentric advance on Cambrai—Mézières'. In his memoirs, the French generalissimo recalled: '… the time had [now] come to extend further eastward the scope of the general operations in which we were engaged and—as been provided for in the memorandum of July 24th—bring into battle as soon as possible the Army which had been last to enter the struggle, that of the United States'.[7] This intent accorded with General Pershing's wish that his growing army would fight as one.

Foch's grand offensive would begin with the Americans in the Meuse Argonne on 26 September, followed by attacks by the First and Third British Armies on 27 September, then King Albert's Belgian and British forces north of Ypres on 28 September and finally the Franco-British attack near St. Quentin on 29 September 1918.[8] The combined force of these four massive assaults would, conceivably, be too much for the Imperial German Army to bear. The only problem in this operational concept was the presence of the German strategic reserve divisions, which were rushed across the Western Front via railroad to maintain the integrity of the line. These formations were the source of strength for the German Army on the Western Front late in 1918, or as Clausewitz would have it, they represented its centre of gravity.[9] Foch needed either to destroy these divisions, or to force their early committal to prevent them from being employed elsewhere.

There were two reasons why an offensive in the Meuse Argonne region would draw a significant number of German strategic reserves. The first was due to the shallowness of the German defensive network here, which was only eighteen kilometres deep as opposed to forty near Arras or sixty near Laon. Simply put, the Germans could not trade space for time in the Meuse Argonne region. The second, and most important consideration, however, was the Sedan-Mézières rail link, which, if severed, would constitute a catastrophe for the Germans. This was a critical transportation artery for Germany; if lost, a significant portion of its army in the West would be cut off and threatened with encirclement.[10]

Sensing this development, Field-Marshal Haig predicted that the Germans would be forced to commit their reserves to contend with the Americans in the Meuse Argonne and to protect their lines of communication at Sedan. Hoping to give his forces a greater chance of success, Haig asked

[4] In the summer of 1918, 250,000 U.S troops a month were being landed in France.

[5] Trans. Colonel T. Bentley Mott, *The Memoirs of Marshal Foch* (London: William Heinemann, 1931), pp. 425-430.

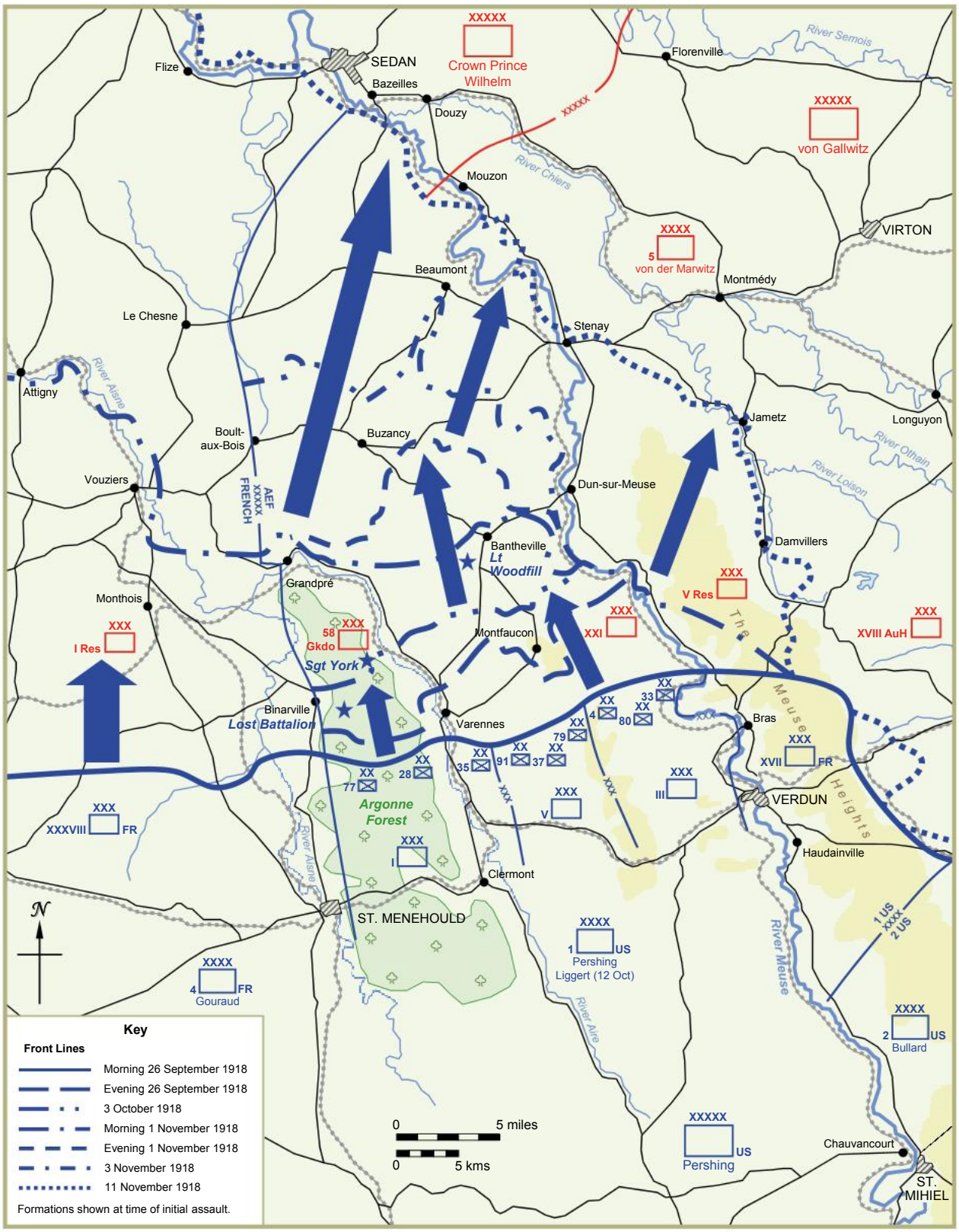
[6] As described by Gary Sheffield in Chapter 26.

[7] Foch Memoirs, p. 457.

[8] Gary Sheffield, *Forgotten Victory* (London: Headline, 2001) pp. 207-210.

[9] Clausewitz defined the centre of gravity in this manner: 'Out of these characteristics a certain centre of gravity develops, the hub of all power and movement on which everything depends. That is the point against which all our energies should be directed'. From *On War* (Princeton, NJ: Princeton University Press, 1989) pp.29, 163, 212, 248-258, 391, 488-492, 595-599, 618-620.

[10] Mark Ethan Grotelueschen, *The AEF Way of War* (Cambridge, England: Cambridge University Press, 2007) pp. 125-128.



Map 27.1 – The Meuse Argonne Offensive, 26 September – 11 November 1918

Foch to delay the British attack, saying, 'I therefore do not propose to attack until the American-French attack has gone in. This latter attack might draw off some of the enemy's reserves from our front. I therefore would like to attack two or three days after the main American-French attack. It we could arrange this, there was a chance of the enemy's reserves being unavailable...[11]'. Marshal Foch and Haig would be proven correct as the German leadership was forced to commit many of its reserve divisions against the Americans in the Meuse Argonne.

[11] John Terraine, *To Win a War* (New York: Doubleday; 1978) p. 153.

Design for Battle

The First U.S. Army would lead the Meuse Argonne Offensive. West of the Argonne, the French Fourth Army would likewise attack north along the western flank of the AEF and the French XVII Corps would conduct raids and demonstrations east of the Meuse River. In total, 600,000 American and 100,000 French soldiers would participate in the initial Meuse Argonne offensive with additional American units moving into this sector to participate in the fighting over the next forty-seven days. The American sector would expand eastwards across the Meuse River after the creation of the U.S. Second Army in October. By 11 November 1918, no fewer than twenty-two American divisions and more than 1.2 million men would serve in this area.

Pershing's plan called for an initial strike to achieve objectives sixteen kilometres deep in the opening phase of the offensive to push his Americans through the three German defensive lines. Once this objective was accomplished, the Americans would link up with the Fourth French Army north of the Argonne Forest and thrust together towards Sedan. Unfortunately, Pershing rejected advice on modern warfare from his French and British counterparts believing that American élan would prevail. His views reminded some of the Grandmaison cult of the rifle, which had cost the French dearly in 1914. Pershing believed that his army would achieve a swift advance across the Meuse Argonne region and decisively threaten the Sedan-Mézières rail network. The French Army would provide the Americans considerable tactical and operational support, including tanks, aircraft, artillery, military advisors and liaison teams. Some 100,000 French soldiers supported the initial phase of the Meuse Argonne operation. In addition to this assistance, Foch designated the Fourth French Army, which was employed on the western flank of the Meuse Argonne area of operations, as a supporting effort of the American push. This French army had the mission to protect the American left flank, to advance in coordination with the Americans as well as keeping pressure on the Germans in the area. Thus, throughout its execution, the Meuse-Argonne offensive was truly a Franco-American effort.

The Battle

The Meuse Argonne offensive occurred in three distinct phases: (1) the initial attack; (2) an attritional period; and (3) break out.

Phase I: 26 September – 3 October. Initial attack and German counter action. The Meuse Argonne offensive began on 26 September with a four-hour barrage fired from 2,700 pieces of artillery with the infantry attack stepping off at 0530 hours. The Americans also had 189 tanks and 821 aircraft flying cover and support. The initial American attack was largely successful, although it fell well short of Pershing's objectives. III and V Corps in the Meuse valley advanced eight kilometres into German lines. However, I Corps, being deployed in the Argonne Forest found itself facing both daunting terrain and a robust German defence; this notwithstanding, I Corps pried portions of the Argonne from its Württemberg defenders. After absorbing the initial shock of the American attack, German reserve divisions began pouring into the region, which included Guards Divisions. This reinforcement had the effect of blunting further significant American breakthroughs during this phase of battle.

Phase II: 4-31 October. The meat grinder: clearing the Argonne, attrition warfare and breaking the Kriemhilde Stellung. Upon entering the second week of the Meuse Argonne Offensive, Pershing found his AEF fighting the type of warfare that he had hoped to avoid: bloody attrition battles. Despite the draconian firing of division commanders who failed to get their units moving faster and thrusting new divisions into the fight, it was a slow and painful month for the Americans because the German strategic reserves had arrived. It seemed as if everything had conspired to defeat the Americans. Not only were they facing motivated German units, but also they were fighting terrain, which favoured the defence as well as miserable weather. Yet, astonishingly, the AEF proved to be an adaptive organization and quickly learned many of the lessons of modern warfare that their British and French colleagues had tried to impress upon them.

In the midst of this, success in this phase of the Meuse Argonne hinged on the small unit actions of three individuals: Major Charles Whittlesley of the 'Lost Battalion', Corporal Alvin York and Lieutenant Sam Woodfill. On October 2nd, the French Fourth Army and the U.S. I Corps attempted to break the German lines in the Argonne. The attack, however, ended in failure, except for 590 Americans from the 77th Division, who managed to penetrate 1.5 kilometres behind German lines. This unit would be called the 'Lost Battalion' and ended up fighting for its life for five days in the western edge of the Argonne Forest being entirely cut off from support. All French and American attempts to rescue this unit failed.

An AEF reserve division, the 82nd, attacked into the eastern half of the Argonne with the aim of severing the German supply road, and thereby, of forcing the enemy to lift its siege of the Lost Battalion. The lead 82nd division regiment seized two important hills near the village

of Châtel Chéhéry on 7 October, and followed up this success with another large attack deep into the Argonne to cut the German supply road on the 8th. However, the Germans brought up reinforcements and were poised to not only defeat this attack into the Argonne, but were also to conduct a two-division counter attack to regain the lost hills. In the midst of this melée, Corporal Alvin York and sixteen comrades penetrated the German line. York killed twenty-five, eliminated a machinegun nest and captured 132 Germans, to include a battalion commander and his staff who was to lead one of the counterattacks. Thanks to York's initiative, the Americans advanced, and severed the German supply road. The 82nd Division's actions forced the Germans to lift their siege of the Lost Battalion. This compelled the Germans to retreat from the Argonne Forest; a significant operational setback for them.

The third important action of this period occurred in the midst of the Meuse Valley east of the Argonne. On 12 October, the AEF's 5th Infantry Division attempted to penetrate the Kriemhilde Stellung, the last of Germany's prepared defensive positions in the region. As the advance began, the unit was confronted by robust German defensive fires. In the midst of this battle, Lieutenant Sam Woodfill continued to attack, personally clearing three German machinegun positions near the village of Cunel, which unhinged their defenses. These small unit actions had the effect of enabling the Americans to maintain momentum – advancing fifteen kilometres by the end of this phase of the offensive.

Phase III: 1-11 November. Break-out, exploitation and open warfare. With more than a million men in the Meuse Argonne, General Pershing finally reached the phase of the war he so longed for – open warfare. On the first of November, American artillery lit up the dawn sky, signaling the final push of the war. Veteran American troops began their attack at 0530 hours and enjoyed considerable success all the way to the outskirts of the much sought after Sedan-Mézières rail network.

Commentary

The Meuse Argonne Offensive played a major role in defeating the Imperial German Army by absorbing a significant number of the German strategic reserve divisions, which assisted the French, British imperial and Belgian forces to the west and north to breakthrough the Hindenburg Line and to advance further eastwards. Hindenburg is reported as saying in his first interview after the armistice in November 1918:

> …from a military point of view, the Argonne battle was the climax of the war and its deciding factor... without the American blow in the Argonne, we could have made a satisfactory peace at the end of a stalemate or at least held our positions on our own frontier indefinitely undefeated.[12]

Hindenburg's view notwithstanding, the significance of the Meuse Argonne offensive continues to be a source of contentious debate, even a century after the fact. Some writers denigrate the American contribution as 'too little, too late', and as providing little more than a psychological boost to the Western powers. It is unfortunate that the debate over the Meuse Argonne offensive becomes lost in a larger discourse on which nation made the greatest sacrifice. The argument over the importance of the Meuse Argonne offensive has not been helped by hyperbolic claims on the American side, which ignores the significant French role while exaggerating the U.S. contribution.

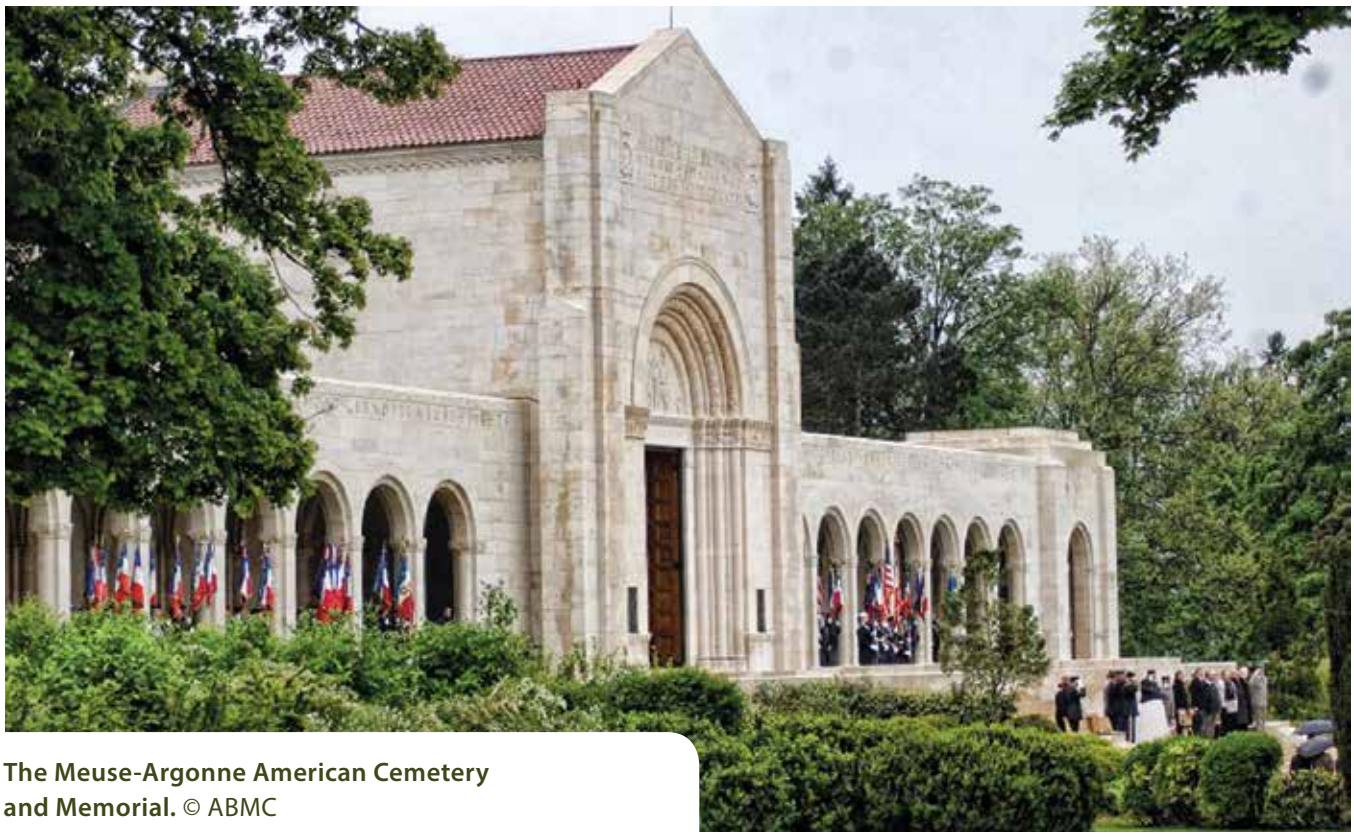
Regardless of one's point of view, however, by the time that the guns fell silent, the Americans had fought more than 25% of the German army, had two million men in the line, and controlled 83 miles of the front (more than any other nation, save France). Yet, framed in the context of Foch's broad front attack, even its detractors must admit that the Meuse Argonne offensive was a key component of the Allied victory in November 1918.

The Battlefield Today

The Meuse Argonne Battlefield is among the best preserved on the Western Front due in no small part to the agricultural nature of the region. An excellent place to begin a tour of the Meuse Argonne is Vauquois. This village sat on a dominant hill in the midst of the Meuse valley.

Three generations of York descendants dedicate the Sgt York Historic Trail near Chatel-Chéhéry.
© Douglas Mastriano

[12] Hindenburg, from an interview in Wilhelmshöhe, November 1918.



The Meuse-Argonne American Cemetery and Memorial. © ABMC

After the German attack of 1914 culminated, Vauquois was astride the front lines, half in French hands and the other half in German. After each side tried to dislodge the other from this key terrain, they resorted to subterranean mine warfare, which, after more than 500 explosions, literally split the hill in half, forever evaporating the hill top village of Vauquois. The Americans liberated the hill on the first day of the Meuse Argonne offensive; not far from here, Lieutenant Colonel George S. Patton was injured while advancing with his tank unit. Future President Harry S. Truman, then a captain, led an artillery battery south of Vauquois.

Another place to stop in the Meuse Argonne sixteen kilometres northwest of Vauquois is Châtel Chéhéry. Just outside this village, units of the American 82nd Division fought for their life on October 8, 1918. It was here that Corporal Alvin York accomplished his great deed. Historians recently constructed a three-kilometre trail in the forest retracing York's steps and erected two monuments where the battle happened so that any visitor can 'walk where York walked'. Along the trail are nine historic signs that recount the battle as it unfolded, demonstrating that tactical actions can have strategic effects.[13] Near the Alvin York battlefield is the Meuse Argonne Cemetery, the largest American cemetery in Europe. This solemn place is meticulously maintained by the American Battle Monuments Commission (ABMC). Serving as the resting place of 14,246 Americans, the cemetery is an enduring testimony of the cost of war, and the price of freedom.

Douglas Mastriano

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Edward G. Lengel, *To Conquer Hell* (New York: Henry Holt and Company, 2008)

John J. Pershing, *My Experiences in the World War* (New York: Frederick A. Stokes Company, 1931)

Gary Sheffield, *Forgotten Victory* (London: Headline, 2001)

[13] For details on the Sergeant York Historic Trail (Circuit du Sergeant York), visit www.sgtyorkdiscovery.com

28. The Battles for the Hindenburg Line

(27 September – 9 October 1918)

Description	British	German
Commanders-in-Chief	Field-Marshal Sir Douglas Haig	Crown Prince Rupprecht of Bavaria
Principal Forces Engaged	**British Expeditionary Force** First Army (part) Third Army Fourth Army	**Army Group Crown Prince Rupprecht** Second Army Seventeenth Army
Context	The BEF tries to break through the German defences of the Hindenburg Line between Cambrai and St Quentin as part of a larger series of offensives co-ordinated by Marshal Foch.	The German army tries to hold as long as possible in the defences of the Hindenburg Line and impose maximum possible casualties on the British in the hope of driving them to the negotiating table.
Casualties	Unknown	ca. 60,000
Consequences	After heavy fighting, the BEF forces the Germans to withdraw from the Hindenburg Line, so abandoning their last prepared positions.	News of the setbacks contributes to the decision of Ludendorff and Hindenburg to sue for an armistice from President Wilson.

Introduction

The battles for the Hindenburg Line (27 September to 9 October 1918) form the climax to the 'Hundred Days' campaign and show the British army at its most potent in the set-piece attack. They proved once and for all to Ludendorff that his efforts in conducting a fighting withdrawal were doomed and that, if the army were to be kept intact to maintain order, peace was required as quickly as possible.

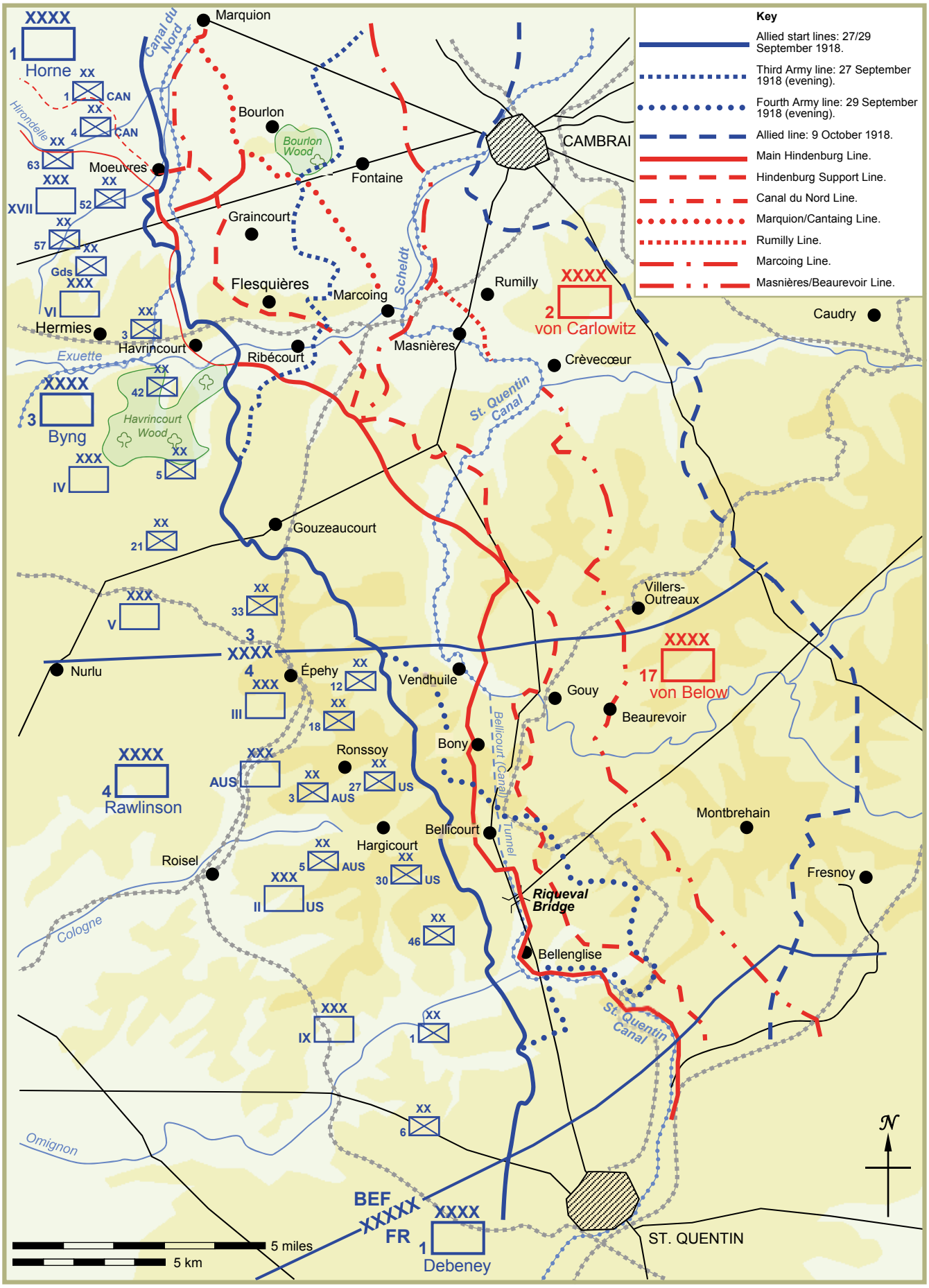
After the success of the Allied attacks in August, Foch decided to follow the same operational approach the next month. Although some of his subordinates advocated bouncing the Germans out of their defensive positions before they had a chance to settle, Foch took a more cautious approach. He planned another round of 'rolling attrition': a flurry of rapid blows up and down the German line, and spent most of the month stockpiling the matériel required. Foch's intention was not to carry out some grandiose manoeuvre, breaking through the Hindenburg Line at a single point and then exploiting into the enemy's rear, but rather to drive into his line at multiple points, crumble the German reserves, and defeat him that way.

Deployment and Plans

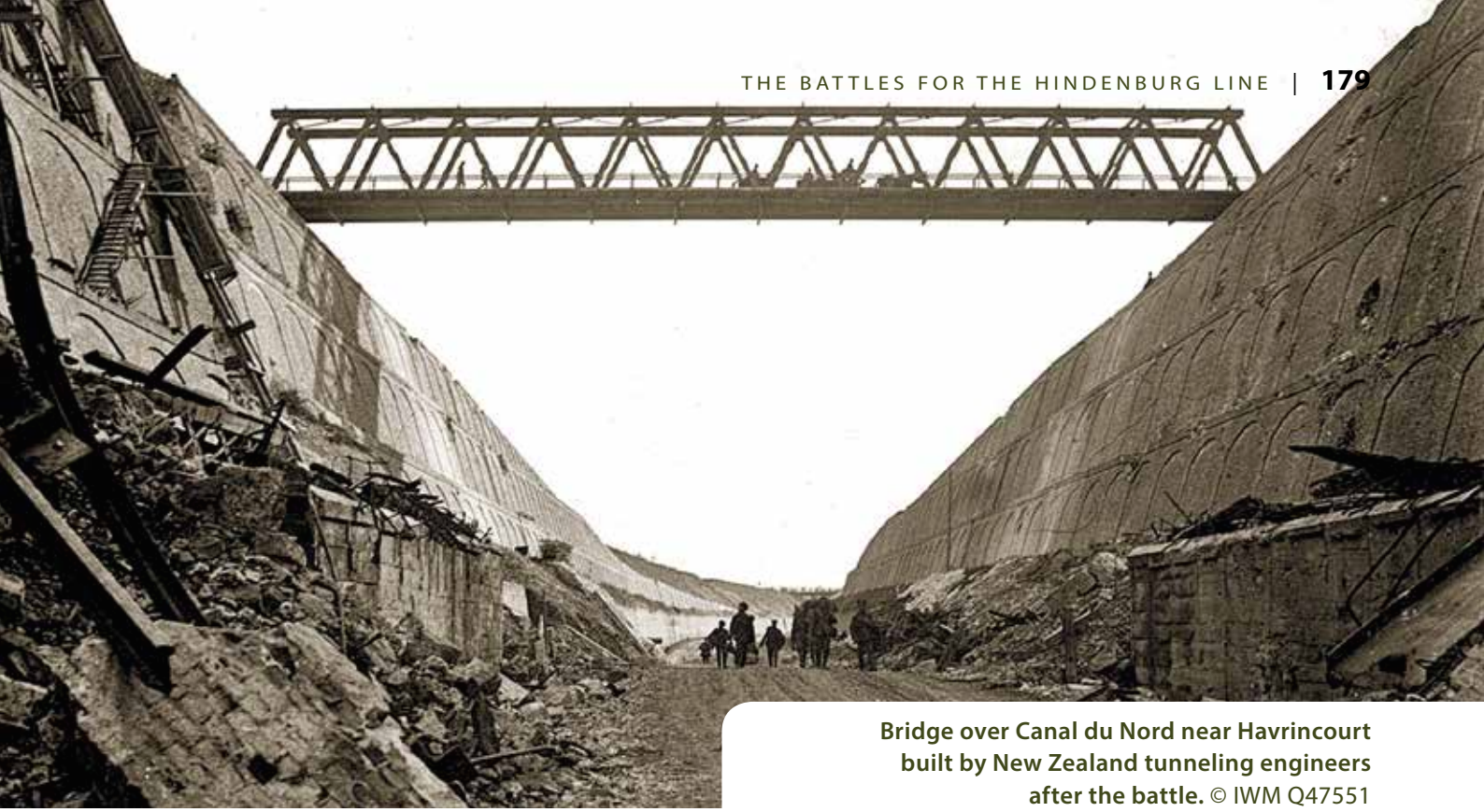
After a series of local operations designed to secure good jump-off positions, Foch decided that on 26 September 1918 the French Fourth and American First Armies would attack between Reims and the Meuse towards Mézières. This developed into the Meuse Argonne battle. Next day, British First and Third Armies would assault the Hindenburg Line and attempt to cross the St. Quentin Canal.[1] In the north, the Group of Armies in Flanders would push back the Germans in front of Ypres on the 28th, and on 29 September, the British Fourth Army, supported by Debeney's French First Army, would attack the main Hindenburg System in its sector.

Field-Marshal Sir Douglas Haig had available, from left to right: the élite Canadian Corps from General Sir Henry

[1] Also known as the Schelde, or Escaut, Canal.



Map 28.1 – The Battles for the Hindenburg Line, 27 September – 9 October 1918



Bridge over Canal du Nord near Havrincourt built by New Zealand tunneling engineers after the battle. © IWM Q47551

Horne's First Army; four corps of General Sir Julian Byng's Third Army, a largely British formation with only the New Zealand Division from overseas; and a further four corps, including one American (II Corps AEF) and one Australian, in Fourth Army under General Sir Henry Rawlinson. In sum, these forces represented a combined attack group of nine corps with some 29 divisions under command, supported by over 1200 heavy guns, 14 battalions of tanks and more than 600 aircraft.

The Germans had a similar number of divisions, organised in depth, in a position with three defensive systems extending back some four to five miles (6.4 – 8 kilometres). Surprise would be impossible. Most of the attacking units would have to cross either the Canal du Nord or the St. Quentin Canal. Some idea of the difficulty that operation involved can be gathered from the image above.

Experience gained in the previous year during the Battle of Cambrai had shown how difficult it was to attack the Havrincourt-Flesquières ridge from south to north. Consequently the decision was taken to pinch out Havrincourt in a preliminary operation before clearing the high ground from west to east and driving towards Cambrai. The mission fell to the 62nd (West Yorks) Division, which had taken the same village on 20 November 1917. Another local action at Epéhy similarly was designed to provide jumping-off positions for the main attack.

By 26 September, training and rehearsals were complete. Some units had studied sand models of their objectives.[2] Wire cutting had been under way since 18 September. No fewer than 425 heavy artillery pieces, three tank battalions and 261 aircraft were in support of General Sir Julian Byng's Third Army. On the Fourth Army front, a four-day bombardment with 750,000 shells, fired from a high proportion of heavy guns, would neutralise enemy defences and artillery. Although yard for square yard this was about the same weight of fire as had failed on 1 July 1916, greater accuracy and more reliable, effective munitions could confidently be predicted to achieve far better results this time.

The Battle

The preliminary bombardment began at 2230 hours on 26 September 1918. According to Rudyard Kipling, one sergeant major of the Irish Guards thought it so heavy that 'even the wurrums themselves are getting up and crying for mercy'.[3] At 0520 hours on 27 September the first units of Third Army went into action. At the same time, the Canadians stormed across the Canal du Nord and drove on Bourlon Wood. Progress was uneven: some units made four miles (6.4 kilometres), others only 500 yards (460 metres). On the whole, the British took their second objectives but failed to reach the third. Nonetheless, Third Army 'had, indeed, made an advance over deliberately planned defences, which would have been hailed as a great victory at the Somme'.[4]

[2] C.C.R. Murphy, *The History of the Suffolk Regiment 1914-1927* (London: Hutchinson, 1927), p. 290.

[3] Rudyard Kipling, *The Irish Guards in the Great War, Volume I: The First Battalion* (New York: Doubleday, Page, 1923), p. 306.

[4] BOH V, p. 45.

Lord Gort, later the commander-in-chief of the BEF in France in 1940, won his VC that day leading the Grenadier Guards. The offensive continued the next day, gaining 2,000 yards (1800 metres) on the right, and 5,000 (4600 metres) on the left. The attempts by V Corps to drive further on 29 September failed, but elements of IV, VI and XVII Corps made good progress and established bridgeheads over the St. Quentin Canal. By 30 September, however, the attack was losing impetus and strong German resistance both at Cambrai and on the east bank of the canal rendered Third Army unable to assist Fourth Army as planned. Rather, Byng now needed Rawlinson's aid.

Fourth Army had attacked on 29 September. In the Bellicourt Tunnel sector, due to some confusion, the U.S. 27th Division advanced unprotected by a covering barrage and was chopped up badly. So was the 3rd Australian Division coming up in support. Only with nightfall were the Allies able to push ahead. Next door to the south, U.S. 30th Division and 5th Australian Division fared better, taking Bellicourt and driving into the German support line.[5] But the most striking feat of arms that day was that achieved by troops of 46th North Midland Division. They had to fight through German trenches and wire, then slide 50 feet down the bank of the canal, swim across, climb up the other side and fight their way through another three lines of trenches and fortified villages such as Bellenglise. This they managed, capturing the famous bridge at Riqueval intact as they did so. By the end of the day, 46th Division had driven some 6,000 yards (5500 metres) into the German positions.

The next few days were spent with Fourth Army grinding forwards through the defences, until on 4 October its advance outflanked the Germans opposite Third Army, and forced their withdrawal three miles to the Beaurevoir-Masnières Line, the rearmost defence of the Hindenburg position, up to which the British closed on 5 October.

Men of 46th Division at Riqueval Bridge. © IWM Q9534

[5] Bellicourt was the Australians' last action of the war, since they were then withdrawn from the line.

Another attack on 8 October soon broke resistance there, and the Germans fell back again.

Impact on the German Army

The renewed Allied attacks hit the German army hard. Reserves were in critically short supply. On 30 September 1918, Hindenburg told his army group commanders that OHL could no longer be counted on to provide reserves and formations in line must rely on their own resources.[6] Within days, army group commanders, including Prince Rupprecht, reported that their last battle-worthy reserves had been used up.[7] The reserve crisis contributed to a loss of confidence throughout the German command. On 28 September Ludendorff and Hindenburg agreed that Germany must ask President Wilson for an immediate armistice. The new Chancellor, Prince Max of Baden, sent a peace note to the United States on 4 October 1918.[8] There was still more than a month of fighting and dying to be done, but now at last the end was nearing into sight.

The Battlefield Today

From Bourlon Wood down to Bellenglise is over twenty miles (32 kilometres). Of the many good vantage points along the way, here is a small selection. From the Tank Memorial at Flesquières one can see its virtues as an anti-tank position in 1917 and why a flanking attack from Havrincourt, rather than frontal assault, made more sense in 1918. Remnants of pillboxes litter the fields in front of you. Head eastwards along the track through the wood and you get a good view of Cambrai and the St Quentin Canal crossings which proved so tough in 1917.

The American cemetery at Bony is beautifully maintained and a tranquil corner for reflection. From the American Memorial up on the ridge at Bellicourt one gets an excellent sense of the three consecutive lines of defence of the Hindenburg Line. The bridge at Riqueval looks much as it did in 1918, although the vegetation has grown back on the banks of the cutting. It is a pleasant spot where it is easy to imagine the fighting of 29 September 1918.

Jonathan Boff

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View from the Tank Memorial at Flesquières looking towards British Lines © Jonathan Boff

[6] OHL Nr 10552, 30 September, BKA HKR Bd 99/101.

[7] Heeresgruppe Boehn (HB) to OHL Ia Nr 1620, 3 October, HB War Diary, BA-MA PH 5 I/47; BKA HKR War Diary Bd 80/10.

[8] IV. Reserve-Korps Generalkommando War Diary BA-MA PH 6/II/23. See David Stevenson, *1914-1918: The History of the First World War* (London: Allen Lane, 2004) for an extremely clear account of the protracted and complex negotiations which led to the Armistice.

Riqueval Bridge © Jonathan Boff

St. Quentin Canal at Bellenglise © Jonathan Boff

All Footnotes

29. The Royal Navy and the First World War

Prelude to War

Throughout the Nineteenth Century the Royal Navy (RN) was the dominant maritime force in the world. Then, as now, trade via shipping was the underpinning 'world wide web'. The RN's success was fundamental to the development of Britain as a 'great power' and was intimately linked with the colonial empire and an economy based on trade delivered by ships. By the end of the century other nations, such as America, sought to emulate Britain's navy, but from 1898 Germany also sought to directly challenge Britain's dominance at sea.

Germany built short range battleships that directly threatened Britain's maritime lifelines and which reinforced the assessment they were intended only to threaten Britain. Germany had initially developed a 'risk theory' that, given this local threat, Britain, with its world-wide responsibilities, would be forced to make an accommodation with Germany. In fact Britain reacted by improving relations with other nations, particularly the ententes with France and Russia; by massing most of the fleet in home waters; and by increasing shipbuilding in both quantity and quality, launching the revolutionary battleship HMS Dreadnought in 1906. By 1912 the naval challenge had been successfully met and Germany diverted significant expenditure back to the army, but many of the antagonisms and alliances of the First World War had already been established.

Fleet Actions

In August 1914 the RN was already mobilised for summer exercises and the 'Grand Fleet' deployed to Scapa Flow in the Orkneys, which would be its main base throughout the war. This fleet of battleships provided the distant blockade of Germany from the wider world and formed the 'shadow of power' in the North Sea that allowed smaller and lighter squadrons to operate from ports such as Rosyth, Harwich and Dover. Although there were many actions in the North Sea the lighter forces were safeguarded from sustained interference by the Imperial German Navy, despite their considerable forces based in North Germany and the occupied coast of Belgium. German ships could appear only briefly for fear of being cut off and overwhelmed by the Grand Fleet and increasingly had to confine themselves to the south-eastern North Sea.

The German Navy achieved some significant tactical and propaganda successes, such as at the only full-scale naval battle at Jutland in May 1916, where they were able to stress that their losses were fewer than those of the RN. However, strategically they remained on the defensive and at Jutland broke off the engagement and fled. The RN's numbers, reinforced by its aggressive action and superior radio intelligence, increasingly inhibited the Germans. In short, the German Navy could sometimes assault its jailer but it could not break out of jail.

For Britain, though, turning general dominance and aggressive action into sustained offensives against the enemy coast, or into the Baltic, was constrained by new technological threats, particularly mines and the ship-killing potential of torpedoes that could now be delivered by fairly small ships or the new submarines. Caution about these weapons was also reinforced by the clear but limited advantages that would arise from even successful attacks, compared to fundamental difficulties that could result from the loss of major RN ships. The Allies simply relied on the sea far more than Germany: Churchill famously described the Grand Fleet's commander, Admiral Sir John Jellicoe, as the 'only man who could lose the war in an afternoon.' It was no accident that Churchill did not say 'win or lose'.

Supporting the Army and Participation on the Western Front

The British Expeditionary Force (BEF)'s deployment to war was achieved and sustained within this context, with relatively light immediate escorts but significant covering forces to react to threats. In common with the developing airpower much of sea power's most profound effects were achieved through determining the enemy's behaviour 'over the horizon'.[1] This result represented an outstanding success given that the main Channel ports of disembarkation, particularly Boulogne, were only 30 miles from the enemy held coast and only 50 from German naval bases. Over 5,000,000 British troops deployed by sea, the vast majority to the Western Front but many

[1] See Seb Cox's essay at Chapter 31.

worldwide, including dealing with colonial revolts, which Germany sought to foment and support, and to Gallipoli and Salonika.

Throughout the war there were 22 million Entente troop movements by sea, 14,000,000 of them cross-Channel, and the vast majority by the British army. The 4,000 casualties the Army suffered at sea, mainly to mines and submarines, is evidence of both the reality of the threat and the general success of the force protection measures.

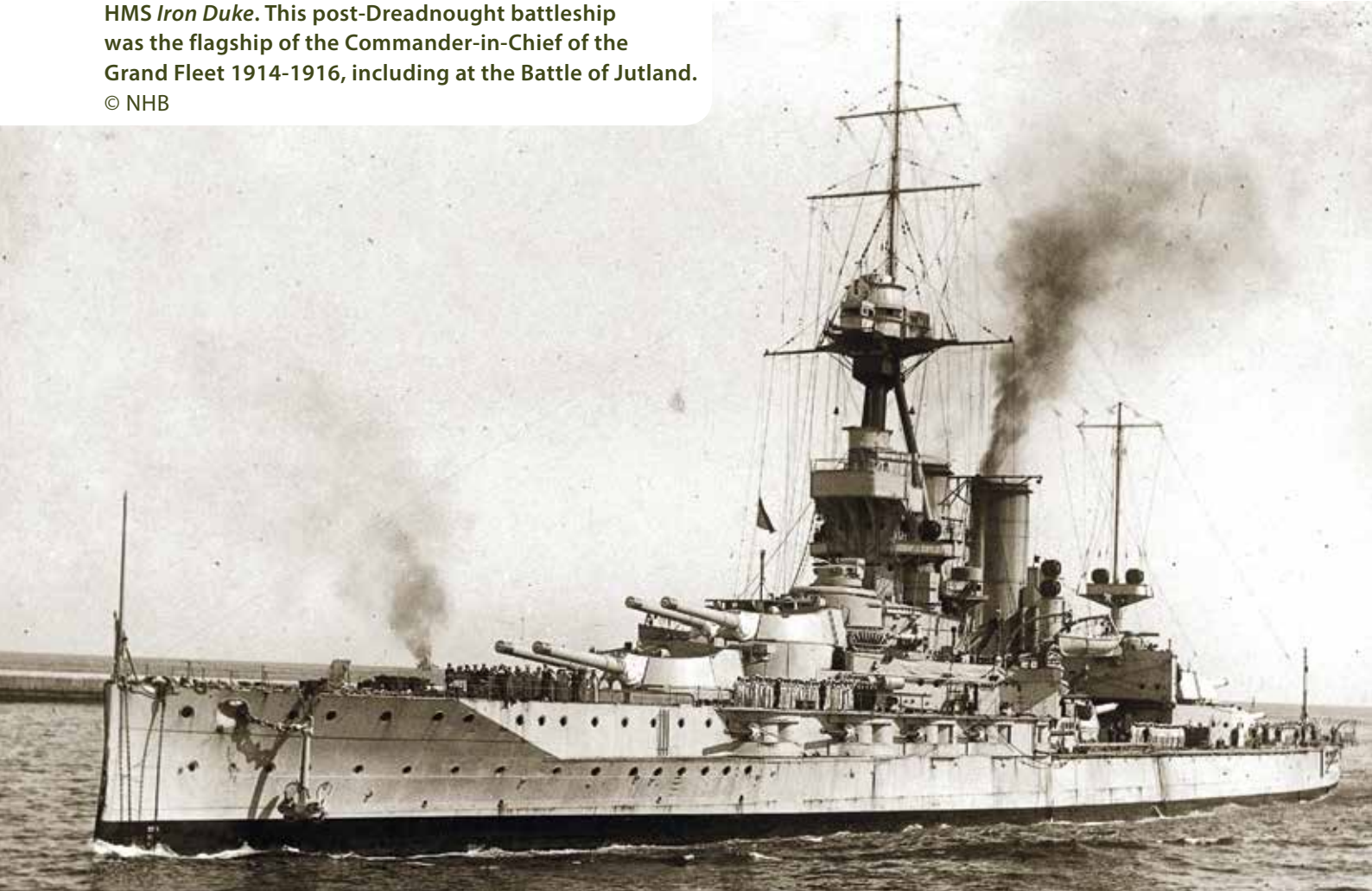
Among the 'troops' deployed were the Royal Navy's direct contribution to the Western Front, which comprised squadrons of the Royal Naval Air Service, Royal Marine artillery and the 63rd (Royal Naval) Division of the BEF. This became an increasingly elite formation containing sailors, marines and soldiers in its ranks, but which suffered nearly 29,000 casualties in the naval personnel alone. The original Naval Division had taken part in the defence of Antwerp in October 1914, fought in the Gallipoli campaign of 1915-1916, and was redesignated as the 63rd (Royal Naval) Division in July 1916. For the rest of the war it fought with distinction on the Western Front, including taking part in the latter stages of the Battle of the Somme (the Battle of the Ancre in November 1916); the offensives at Arras and Ypres in 1917; and in the 'Second' Battles of the Somme, Arras and Cambrai in 1918.

Countering Unrestricted Submarine Warfare

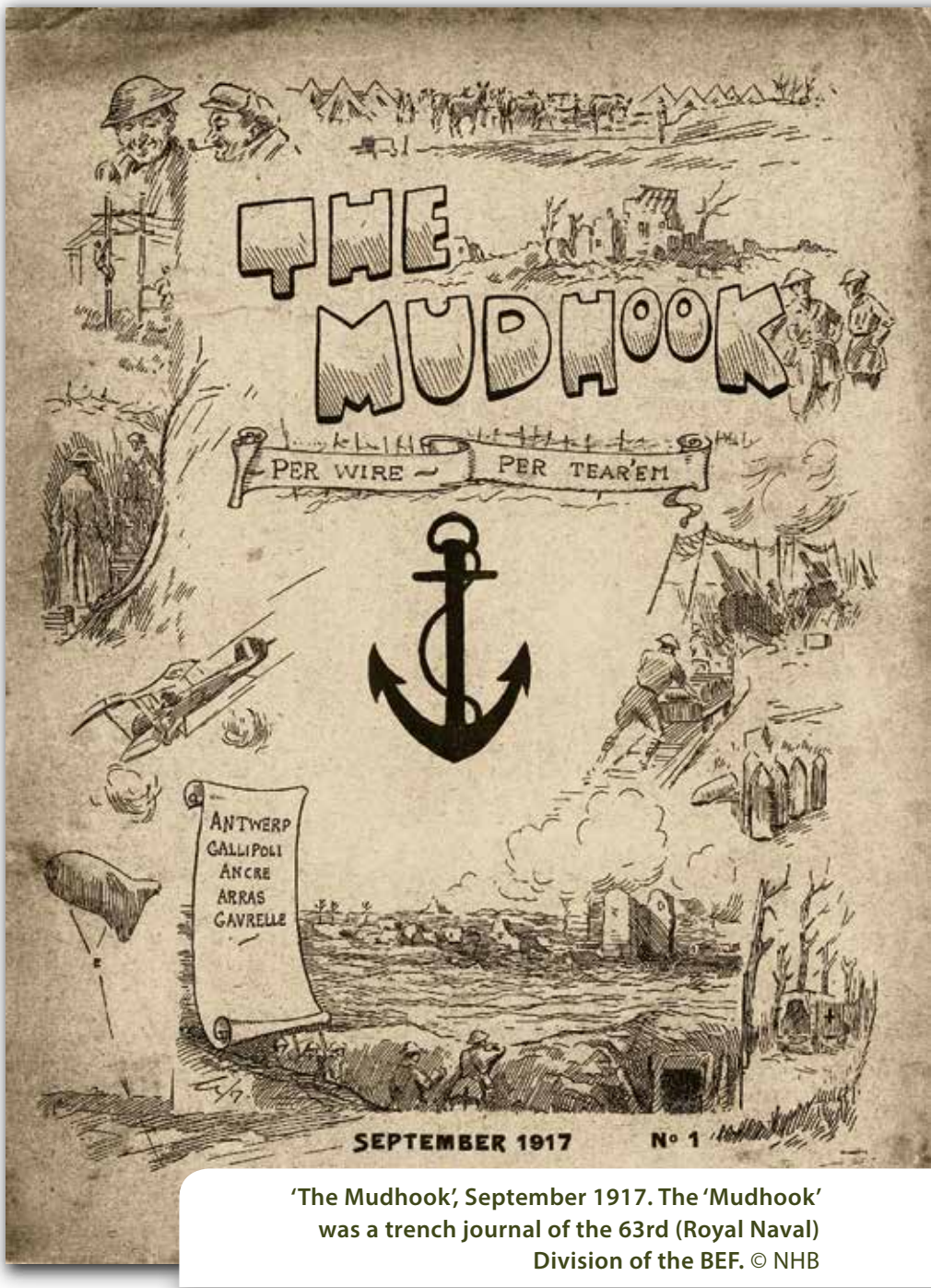
The increasing protection of troop shipping, and then its convoying as required in high threat areas, provided one of the models for the protection of broader merchant shipping from 1917, when Germany resorted to sustained, unrestricted submarine warfare. The number of British merchant mariners killed during the conflict – some 15,000 – indicates the seriousness of this assault. However, measures including convoys, which both limited the availability of targets and exposed submarines to counter-attack, mine barriers, especially across the English Channel, and the use of U.S. ships and aircraft, all sufficiently controlled, if not defeated, the German submarine campaign.

Germany's resort to unrestricted submarine warfare in 1917 had arisen out of its frustration with the draining deadlock of the war, particularly the Western Front, combined with the increasingly debilitating effects of the Entente's maritime blockade of the Central Powers. The combination of the British blockade, fundamentally limiting and distorting Germany's economy, and the huge demands of industrial scale land fighting meant German leaders knew they were very likely to lose an enduring war. As in their pre-war strategy German leaders miscalculated because they did not allow for effective British reactions

HMS *Iron Duke*. This post-Dreadnought battleship was the flagship of the Commander-in-Chief of the Grand Fleet 1914-1916, including at the Battle of Jutland.
© NHB



to their 1917 submarines attack, which they expected to cause Britain to collapse. The expected effect, which they had accurately predicted, was the entry of the United States into the war, which occurred in April 1917. This in turn then led to Germany's decision to launch massive offensives on the Western Front in 1918 to try and achieve a favourable result before large-scale U.S. troop deployments changed the balance of forces in Europe.



'The Mudhook', September 1917. The 'Mudhook' was a trench journal of the 63rd (Royal Naval) Division of the BEF. © NHB

Blockading Germany and Protecting Allied Trade and Transport

The blockade against Germany was a relatively slow-acting but increasingly potent means of crippling the nation. This was partly because it took time to develop the military, legal and economic regime to make it effective, and because Britain ultimately prioritised preserving relations with America over making improvements in blockade. The USA protected neutral trade rights until April 1917, but helped tighten the blockade dramatically from then on. Most historiography, British and German alike, has focused on the societal and hunger elements of the blockade which contributed to German collapse on the home front and the naval mutinies of 1918. However, particularly for this volume, it is also worth exploring the much less well-known consequences of blockade in distorting the German army's operational capability, especially in the offensive.

Throughout the war Germany was still able to produce sufficient weapons and ammunition, drawing on the resources of central Europe, the Baltic trade for vital ores and achieving technical substitution against imports in areas, such as nitrates. However, in motor transport the situation was far more desperate with little access to the oil and rubber required, resulting in vehicles that were scarce and of low performance. By 1918 the German army only had one motor vehicle for every 160 men, as opposed to one for every 20 in the BEF. With horses Germany suffered from an effectively 'fixed' central European stock, with no option for wider world imports; any removal of horses from agriculture further depressed food production. As early as 1916 standard gun artillery teams had to be reduced from six to four horses because of this factor. The German army started their 1918 offensives with a greater deficit in horses than men and with the horses only receiving 20% of the fodder of BEF horses, further reducing their performance. These structural shortcomings, inflicted by blockade and sustained military consumption, were a significant element in preventing the Germans turning the advances of 1918 into sustained, breakthrough offensives. [2]

[2] See Chapters 19, 20 and 22 by David Zabecki.

The limitations and distortions imposed on Germany must also be contrasted with the world-wide system that sustained the Entente forces on the Western Front. It provided the basis for their survival and the capability of the Allies to return to the offensive in 1918. In terms of troops the short-range deployment of the British army was reinforced by over a million imperial troops and a million non-European labourers. To these figures must be added two million U.S. troops, a third of whom were transported to Europe in German ships which the Entente had captured. This import of American manpower into the Allies' order of battle provided a crucial margin of advantage on the Western Front.

Entente strategy and operational methods were made feasible through the maritime global trade system, which provided finance and equipment. French industry had been separated from many of its raw resources by German conquest in 1914, but still produced key war materiel due to its ability to draw on imports of British coal and financial loans, as well as U.S. raw materials. In turn, France supplied many of the heavy weapons for the American Expeditionary Force of 1918. It was this amalgamation of resource that provided the relative abundance of horses, guns, shells, aircraft, tanks and Lewis guns which underwrote the flexible operational methods that Entente forces, and particularly the BEF, were applying with such success by 1918. This Allied advantage, combined with the general hollowing and loss of capability of Germany, left it unable to react to wider events. It forced Germany to sue for an armistice, where one of Britain's main conditions was the internment of the German fleet, particularly its submarines.

Conclusion

Overall in manpower terms the RN was the least expanded of the Services rising from 145,000 in July 1914 to around 370,000 all ranks for much of the war. Much of its service involved long periods of arduous blockade, rather than frequent battle. The fleet's 39,000 casualties (in addition to those of the Royal Naval Division) reflect these operating conditions, but the fact that over 34,000 of these losses were killed demonstrates the nature of naval fighting.

The shape of the fleet had significantly evolved to include maturing submarines and aircraft that meant maritime operations now covered three dimensions, even if the battleship remained the dominant weapons system. The fleet had fundamentally shaped the outcome of the conflict through its ability to apply world-wide resources to achieve the critical margin of success, particularly on the Western Front. The Australian official historian Charles Bean later wrote that victory in 1918 relied on the endurance of the Entente armies throughout the war, their skilled offensives in 1918, U.S. reinforcements and British command of the seas. He then continued, 'To ask "Who won the war?" is like asking, "On which leg does a table stand?"

Stephen Prince

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30. The First World War

A Revolution in Military Affairs (RMA) and the Birth of the Modern Style Of Warfare

Introduction

The First World War was probably the period of most radical and rapid innovation in military history, amounting to an RMA. This contention appears to be at variance with the popular perception that it was instead a period of stultified thinking, led by commanders lacking imagination, capable only of persisting in 'one more' push through mud and blood. The imagery of trenches and slaughter often seems to validate these perceptions of sterility and futility. However, it is those scenes that endorse the contention, not its reverse.

A soldier of 1815, beamed down to the battlefields of August 1914 might well have recognized and understood the basics of what he was seeing, phalanxes of infantry, often in colourful uniforms, advancing in open ground with bayonets fixed, intimately supported by light field guns firing directly, while cavalry charged with lances. Beamed down to the Somme, just two years later, that same soldier would probably have been thoroughly bemused. In the meantime, something profoundly significant in the history of warfare had occurred. We should see the battlefields of 1914-18, especially on the Western Front, as laboratories as well as battlefields, where commanders under the extreme duress of combat undertook relentless innovation: conceptual, technological and tactical, with an imagination and resolve rarely if ever matched. The War saw the maturing of novel concepts and technologies, and the birth of others, which would only come to fruition after 1918.

Unarmed reconnaissance aircraft played a small but significant role in the battles of manoeuvre in 1914, but few foresaw the birth of modern air warfare in just a matter of months: ISTAR missions using a variety of sensors, air-to-air combat, tactical bombing, strategic bombing, air-to-ground attack, ground-based air defence, logistic resupply by air, and even proposals for divisional-sized airborne landings in Germany.

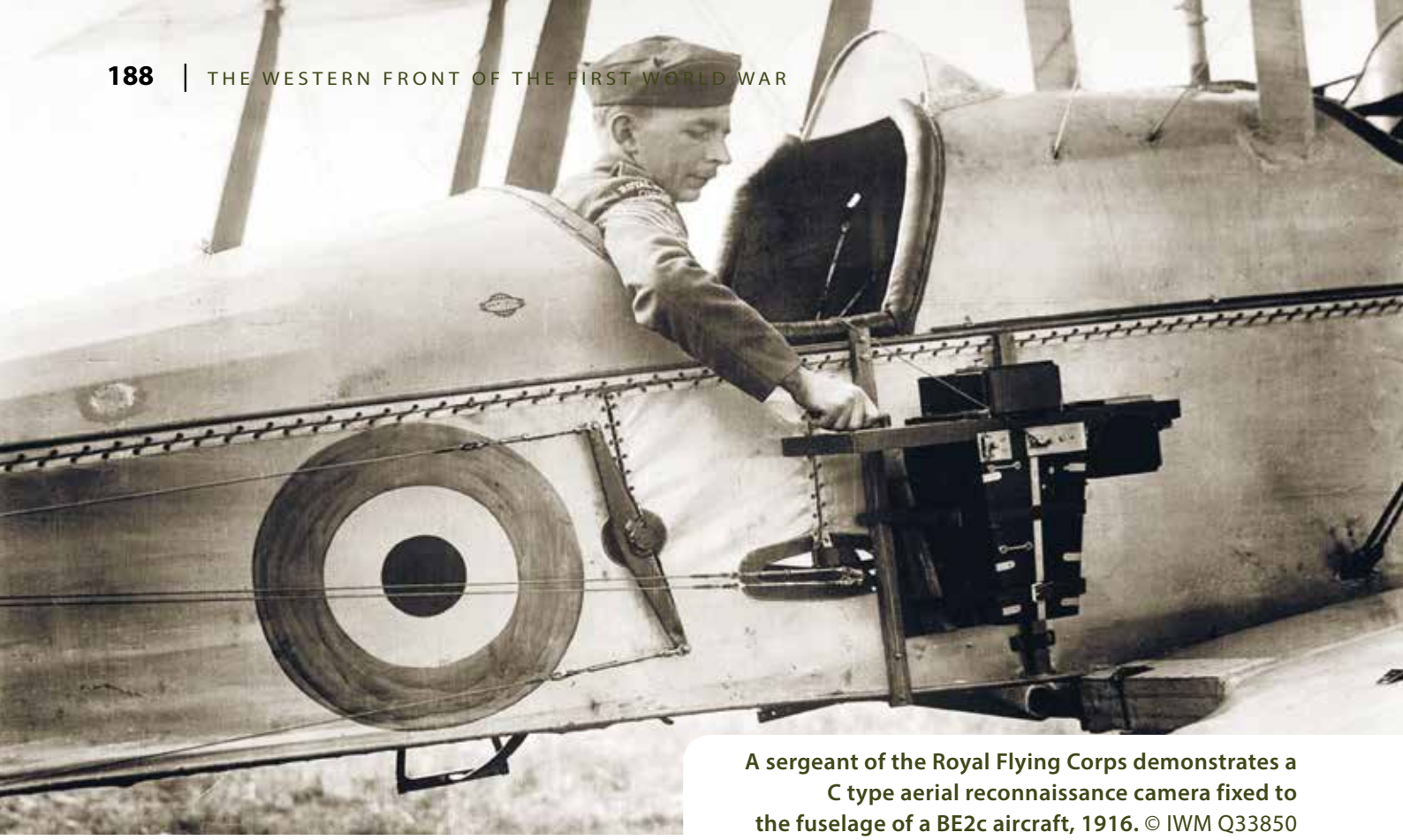
At sea, the relatively new submarine fleets conducted oceanic campaigns, precipitating novel anti-submarine convoy measures and weaponry to match. Few had anticipated the full potential of a naval air-arm, let alone the manner in which developments of the First World War would evolve to dominate naval warfare in The Second World War. The painful experience of major opposed amphibious landings in the Dardanelles would be the seminal case-study for those who planned amphibious operations in Europe, North Africa and the Pacific in the 1940s.

The importance of electronic networks is not a recent phenomenon. Within days of the outbreak of war in 1914, the Royal Navy had launched a decisive attack on Germany's trans-oceanic cable system, and destroyed its global network of wireless stations. By 1916, the Western Front was connected by a vast network of cables and radio systems. Electronic interception and various forms of electronic warfare were soon prevalent.

Modern Warfare

The RMA and the birth of the Modern Style of Warfare, are best seen in Land operations on the Western Front, in the forces of all combatants, often learning independently from their shared experiences. All were formed in the same 'wind-tunnel' of war, sharply sculpted by the same cruel logic and 'physics' of combat. For millennia before 1914, land warfare had been an affair of a two-dimensional linear encounter, with the first line of a force engaging that which it could see and attack directly, encouraging flanking manoeuvres and envelopments. Engagements were therefore likely to be at short ranges, and weapons were designed accordingly. That would change with the systematic development and employment of indirect artillery fire, that is the engagement of a target which cannot be seen by line-of-sight from a gun.

Machine-guns, wire, poisonous gas, mines, grenades, indirect-firing artillery, and electronic communications, had played important roles in the Russo-Japanese War of 1904-05. Their implications for modern warfare had been described and understood by observers and scholars. By 1914, however, military institutions had still failed to recognize these fully, focussing on the need for a quick war, won through manoeuvre and élan, if only because



A sergeant of the Royal Flying Corps demonstrates a C type aerial reconnaissance camera fixed to the fuselage of a BE2c aircraft, 1916. © IWM Q33850

the implications of these new technologies, which favoured firepower in the defence, seemed unacceptable: an attritional war, lasting years which might, as Jan Bloch predicted, result in not just the military collapse of the loser, but also the social, economic and political disintegration of European societies more widely.

The harsh realities of war in 1914, and the dominance of firepower in the defence, brought rapid change. Opponents were locked together, struggling to implement new capabilities to over-match this dominance and break the deadlock. The decision/action cycles of tactical and technological invention, organizational change and industrial production were turbo-charged by the dire imperatives of daily combat. Despite the merits of indirect fire being acknowledged in the Russo-Japanese War, it had not become the dominant method of fire in European armies, which lacked many of the elements that would soon be applied, permitting it to dominate the battlefields of the First World War. In 1914, there were no means of locating targets in depth, and only the very few howitzers in service were capable of engaging targets in dead ground. In the British field artillery, all ammunition was shrapnel, there were no forward observation officers, planning did not exist above brigade level, and there was no centralized high-level command of artillery.

Indirect Fire

In the late Summer of 1914, most guns deployed in the open and were swept away. Thereafter they would adopt concealed positions, struggling to survive in the growing inferno of counter-battery fire while the fortified lines they were attacking became ever stronger. Indirect fire soon became the key to success in offensive operations rather than just a means of self-protection. Battles were no longer ones of two-dimensional linear encounter, but ones in which artillery in any position in the friendly area of operations (AO) could potentially engage any position in the enemy AO, making increased range ever more important.

Indirect fire therefore permitted the engagement not merely of the enemy front line, but also simultaneously or sequentially, deeper lines of defence, strong points, artillery, headquarters, logistics, lines of communications and reserves. It was also able to shape perceptions about intentions. Battlespace became just that, with the use of the third dimension to observe targets and fire, and thereby to reach, strike and achieve complex effects.

Observers proliferated on land and in the air, assisted by new optical, thermal and acoustic sensor technologies, locating targets in depth. Gun positions were accurately surveyed and meteorological data, shell rotation, charge temperature, and marginal errors in ammunition batch-

manufacture were also accounted for in new methods of computation, generating firing data for guns. These measures steadily increased the ability to hit accurately targets which were invisible from the gun position.

Advances in Fire Planning, Intelligence and Logistics

In 1914, the BEF had taken to France a greater weight of fodder than ammunition. As the number of guns increased exponentially, so did the consumption of ammunition, leading to the creation of a massive new arms industry with profound consequences, not least for the role of women in Britain. The demand for heavier guns[1] and ammunition capable of tackling massive field defences at longer ranges continued to grow.[2] The armies of 1914 had minute intelligence capabilities and artillery staffs. By 1916, staff branches, especially for logistics, intelligence and fire planning had grown in a way few would have predicted, but which we would fully recognize today.

The means evolved to engage targets indirectly, but their location and the application of fire was still too imprecise. Crude experiments were made in 1915, and in 1916 at Verdun and on the Somme. It was judged necessary to smother the ground with so much fire that key targets were almost bound to be hit. These lengthy bombardments forfeited surprise as well as wrecking terrain. Images of the Western Front are largely a consequence of that inaccuracy in a novel system, developed under fire. However, by late 1917, increasingly sophisticated techniques enabled a field gun firing at 6 kilometres range to hit an unseen target without adjustment with an accuracy of 50 metres; predicted fire, much as might be expected today.

By 1917, a shorter more precise fireplan could achieve a degree of surprise without losing its effect; obstacles that would have required prolonged bombardment might now be breached by tanks. Air superiority offered aerial observation of a changing situation and the ability to update commanders, but also the chance to engage targets directly from the air as part of a fireplan. The synchronization of the manoeuvre of tanks and infantry with the fire of guns and aircraft became a critical element in planning.

The Significance of the Battle of Cambrai, 1917

The first such coordinated all-arms offensive took place on 20 November 1917 at Cambrai.[3] The outcome of the battle disappointed in many ways, but its greatest achievement was its startling innovation. The first major use of tanks may be the 'motif' of Cambrai, but the first predicted fireplan, coordinated with armour and air, enabled by a gigantic electronic network of sensors, command, control and communications, and 'shooters', is its greatest historical significance.

Planning for the Battle of Cambrai was conducted at high level by many staff branches under centralized command. Information about enemy dispositions was gathered by aerial, electronic and optical means, and transformed into intelligence about targets to be hit with precision throughout the enemy's AO. The plan envisaged a penetration or breakthrough by manoeuvre forces. The predicted artillery fireplan was synchronized with air operations and armoured manoeuvre to achieve surprise, dislocation and other synergies of effect, with fire carefully measured according to the neutralizing or destructive effects required to break the enemy's cohesion and will.

The battle was arguably the first 'modern' battle, in that its collective novelties have remained characteristics of warfare since. Its format was seen in more complete form in the German offensives of Spring 1918, and the Allied offensives later that year. This model is familiar to us today. It is evident in the doctrine of NATO and Warsaw Pact armies of the Cold War, it resembles the Egyptian crossing of the Suez Canal in 1973, and more recently can be seen in the minds of the Gulf War planners of 1991 and 2003.

Conclusion

Some immature concepts and technologies of the First World War only came into their own in subsequent decades, but this is yet further evidence of its radical innovation. The employment of tanks from 1916 was very visible evidence of that startling innovation, but its degree should not be exaggerated.[4] This is not to decry the introduction of the tank, for within 20 years this astonishing product of tactical necessity in the First World War had morphed into something much more significant

[1] In the Second World War, the role of heavy artillery was largely assumed by aircraft; but new branches of artillery took on direct firing anti-tank and anti-aircraft roles.

[2] At the other end of the scale, a family of novel infantry mortars proliferated.

[3] As described by Charles Messenger in Chapter 18.

[4] The tank of the First World War was not part of an operational system such as that of 1940. It was essentially a self-propelled machine-gun or artillery piece, designed to breach and dominate trench-lines for advancing infantry. The British Mk IV, for example, had a speed of about 2 mph in rough terrain, mechanical endurance of about 8 hours, and most crews were unfit to fight from motion sickness after about 2 hours. By the end of the War, its use was diminishing, with emphasis instead on the combination of artillery and infantry. After 8 August 1918, when 630 British Mk V tanks were deployed, there were only six occasions when more than 50 tanks were used, and only three featuring more than one hundred.

[5] The super-gun built for Saddam Hussein was modelled on The Paris Gun.

at the operational level. The breakthrough operations of 1918 provided the model for German offensive operations of 1939-1941, enhanced by further conceptual thinking and not least by technical developments of armoured vehicles, tactical aircraft and wireless.

Equally, the German Paris Gun[5] of 1918, designed to deliver the world's first long-range surface-to-surface strategic attack with chemical weapons on Paris (although it only ever fired high explosive), was an astonishing technology, but one that failed to achieve the desired effect. The artillery team that built the Paris Gun went on to initiate the A4/V2 missile programme, with the same stated intention to achieve strategic results, although the V2 was also arguably ahead of its time. After 1945, it was that V2 team that designed tactical missiles and ICBMs, also designed to deliver weapons of mass destruction on operational and strategic targets. These dominated Cold War military calculations and continue to do so in Southwest and Northeast Asia today.

Critics of commanders of the First World War often fail to give them credit for their startling innovations in warfare. Such innovation while fully engaged in battle, indicates an astonishing degree of daring, imagination and competence. Tread carefully on the reputations of these commanders, for the framework of thinking often used to criticize their performance is likely to be one they invented. The unwelcome news for some is that General Sir Anthony Melchett knew a thing or two, laying the foundations of warfare for the next hundred years. It is the 'IP' of Melchett's real comrades-in-arms which has formatted much of the way we think about modern warfare. Many thoughts that we may imagine to be our own, and far removed from traditional notions of this conflict, have their roots in Flanders Fields. So look beyond the imagery to understand the dynamics of the RMA of the First World War.

Jonathan Bailey

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Mark IV Tank, D51 Deborah, Flesquières.
© Philippe Gorczysnki MBE

31. The Development of Air Power, 1914 – 1918

Early Roles

The story of air power on the Western Front in the First World War is one of rapid expansion and development both technically and militarily. When the Royal Flying Corps (RFC) mobilised its four aircraft squadrons in August 1914 and ordered them to concentrate at Dover ready to deploy to France the aircraft were so underpowered, flimsy and mechanically unreliable that many of them crashed or forced landed on their way to Kent. Airmen were initially at greater risk from their own aircraft than they were from the enemy: by the time the RFC suffered its first two combat fatalities three weeks into the war, five men had already been killed in flying accidents.

The RFC aircraft initially concentrated on their primary role of visual reconnaissance, a task which at this period they could generally accomplish at greater depth, with less opposition and more rapidly than the cavalry. These early reconnaissance flights established the movements of the German First Army of General von Kluck, forestalling German attempts to outflank the British Expeditionary Force (BEF) under Field-Marshal Sir John French. They allowed the latter to withdraw his forces safely after the Battle of Mons. Subsequently, they proved a key factor contributing to the successful Allied counter-attack at the Battle of the Marne in September 1914. This initial mobile phase of the war also saw the first ineffectual attempts at air-to-air combat as each side strove to shoot down or drive off the enemy's reconnaissance aircraft using rifles and revolvers, together with the first attempts at dropping weapons from the air, initially hand grenades and petrol or improvised bombs, usually dropped by hand.

Artillery Observation

By the end of 1914 the stagnation of the frontline and the onset of trench warfare made artillery observation amongst the most important tasks for the RFC. Two junior lieutenants in the RFC developed the simple but effective 'clock code': by using a celluloid disc placed over the map and marked with range rings and the numbers one to twelve the fall of shot could be signalled to a battery with a single letter/figure combination. This simple code was used throughout the war. It was a similar 'bottom-up' innovation, which was to lead to the next improvement and the task that became a key role of the RFC (later the RAF) and other air forces, namely photographic reconnaissance. Although there had been some pre-war experimentation in this field, it had not been followed through. In the RFC it was again the initial efforts by junior officers, using their own cameras and developing their own photos, which led eventually to the potential of this means of reconnaissance being recognised and exploited.

The breakthrough came in January 1915 when a lieutenant produced a mosaic of the frontline trenches, which his squadron commander took to GHQ. A staff officer was despatched to investigate what progress the French were making along similar lines and shortly thereafter an RFC photographic section was formed. They produced the first specification for a dedicated aerial camera, which was built by a firm in the United Kingdom. By February 1915, the RFC had produced a photographic mosaic, and hence accurate maps, of the entire German trench system on the British front.[2] The fundamentals of modern ISTAR were established in those early months of the First World War and have not changed significantly in the twenty-first century, even though the sensors and communications are now digital, instantaneous and, along with the weapons, many times more powerful.

Expanding Roles of Air Power

The Battle of Neuve Chapelle in March 1915 saw the first British attempt to exploit these technical developments in a comprehensive manner. The battle also saw the first attempted exploitation of air power's capacity to affect the battle in depth, with bombing attacks on German HQs and railheads.[1] Too weak to have real operational effect, nevertheless these attacks pointed the way to the future use of air power both to interdict communications and to disrupt command and control functions. These developments had also made the fight for control of the air increasingly influential for success on the ground. Here the Germans gained the initial advantage through the introduction of the single-seat Fokker Eindecker with a synchronised machine-gun firing through the propeller arc, although the so-called 'Fokker Scourge' was as much psychological as physical, with many Allied aircraft actually falling victim to German two-seaters. In part the

[1] See the description of the Battle of Neuve Chapelle by Michael Orr at Chapter 6.

[2] See John Peaty's description at Chapter 35.

German advantage lay in their engines, which were then more powerful than those of the Allies. However, until the early months of 1916 the air services of all the major combatants were essentially conducting experimental warfare in a medium as unfamiliar as it was unforgiving.

1916: Verdun and the Somme

By 1916, the Allies had introduced their own more effective combat aircraft and had also begun to homogenise aircraft types within squadrons, simplifying engineering and logistics, and enabling the development of formation flying and consequent tactical innovations. Nevertheless, the airmen of all nations suffered from the dispersal of their forces by generals intent on retaining operational control of their own 'penny packets' of air assets. This unfortunate tendency was reinforced both by the relatively junior rank of many air commanders, with lieutenant colonels commanding both the French and German air services on the Western Front in early 1916 (although Hugh Trenchard was a major-general by this point), and by the unfortunate if understandable propensity of the soldiers to view the appearance of a single enemy aircraft as a failure on the part of their own airmen, leading to unrealistic demands for standing patrols and further dispersal of assets. Just as on the ground, the situation in the air could be, and frequently was, affected by localised concentration, but this phenomenon was not well understood by army HQs. Thus the air situation could be changed as much by allocation of scarce resources and concentration as by swings in the pendulum of technical superiority, though the latter did matter. During the two major and long running battles of 1916, at Verdun and on the Somme, air superiority changed in accord with both these factors.

Although in February 1916 the Germans achieved initial superiority over Verdun by concentration, the French in turn reinforced their squadrons; the arrival of their new Nieuport 17 fighter also swung the technical tide in their direction. By the start of the Battle of the Somme in July, the RFC, with assistance from the French, had gained air superiority enabling recce and artillery direction sorties to proceed largely unhindered. This situation was in part due to the status of Trenchard and the mutually trusting relationship he had developed with General Sir Douglas Haig. The British and French and to a lesser extent the Germans also attempted to fly regular 'contact patrols' during attacks which, in the days before man-portable wireless[3], were designed to establish the positions of the advancing troops. This function was vital in informing headquarters how an attack was faring and thus enabling reinforcement of success and proper direction of the guns once the infantry had outrun their pre-arranged artillery support. The RFC also directed artillery against German guns and infantry concentrations whenever it could.

At both Verdun and the Somme, the German infantry frequently recorded their extreme anxiety at the approach of an Allied aircraft, knowing that it invariably presaged an artillery concentration, which they tellingly referred to as 'drumfire', falling on their heads. Aerial presence, then as now, had a significant effect on both the enemy's morale and his ability to exercise tactical freedom. Interdiction attacks at depths of up to 35 kilometres and offensive counter air strikes against German aerodromes met with mixed success, partly because the resources to develop a sufficiently heavy weight and frequency of attack were not available. Hence the German air service's signal failure successfully to interdict the single vulnerable road (Voie Sacrée) along which all French logistical support and reinforcements travelled to Verdun, with a motor lorry passing by every fourteen seconds.[4] However, the Germans enjoyed considerably more success with their night interdiction campaign against British logistics in 1918, which caused considerable disruption.

Notwithstanding its limitations, the pattern for the future conduct of the air war and its intimate relationship to success on the ground was thus largely established by 1916; it continued with the addition of further refinements and innovations until the end of the war. The need to fight for, and obtain, air superiority was firmly recognised as being fundamental. Without it, the crucial reconnaissance, targeting, and direct attack capabilities of air power could not be fully exploited or in some circumstances even undertaken at all. On the Somme it was Trenchard's willingness to take the air battle deep into enemy territory along with the (albeit temporary) technical superiority of newly introduced DH2 and FE2 aircraft, which gave the British air superiority. This advantage drove the tactical battle in the air away from the frontline, allowing the so-called Corps squadrons to conduct their important business of close air support in the tactical zone either side of the lines relatively unhindered. Success would probably have been even greater had Trenchard concentrated more of his forces on the Somme. Late in the battle, the introduction of superior single-seat fighters on the German side (the Albatros and Halberstadt), and a change in organisation which saw these aircraft concentrated in *Jagdstaffeln* (or Jastas), swung the pendulum back.

[3] See the essay by Bob Evans on British communications on the Western Front at Chapter 37.

[4] As described by Frank Baldwin in his chapter on the Battle of Verdun at Chapter 11.

Photographic interpretation of enemy trenches at the RFC HQ at Arras, France, in February 1918. © AHB

Bloody April, 1917

During the winter of 1916-17 the position of the Allies gradually deteriorated in the air. Although outnumbering the Germans most of the Allied aircraft were now obsolete – just twenty per cent of Trenchard's strength was made up of the newer types, including two squadrons of naval Sopwith Triplanes. The German construction of the Siegfriedstellung (known to the Allies as the Hindenburg Line) behind the Somme salient had gone largely undetected, partly because the outclassed RFC aircraft had difficulty penetrating to the necessary depth in the face of the Jastas. Casualties rose inexorably in the early part of the year, culminating in the famous 'Bloody April' during the Arras offensives. In fact the RFC was able to adjust its tactics during the course of the Arras offensive and, whilst casualties were certainly heavy, it was not an unmitigated disaster. Trenchard lost about a third of his strength, 253 aircraft (71% over Arras), and 410 aircrew became casualties (roughly 20 per cent) which was certainly unsustainable in the long term, but the fact remains that his overall strength had actually increased by the end of the month, though it did decline slightly in May.

There were two primary causes for the slaughter: obsolete aircraft and faulty tactics at the start of the offensive. Trenchard could do little about the first, but adjusted the second with positive effect. Once it became clear that the Jastas, and Manfred von Richtofen's Jasta 11 in particular, were causing heavy casualties, the RFC adopted a policy of sending more powerful formations over German territory closely integrating different aircraft types – once again concentration in the air reduced casualties. Some 171 aircraft were lost on the Arras front between 26 March and 29 April, but only 96 between 30 April and 3 June, and in all some 322 aircrew were killed or captured in that period. The RFC effort was prodigious, amounting to 19955 sorties. It is also important to remember that, despite early tactical errors in the air battle, the RFC's corps squadrons were still largely able to fulfil their crucial artillery and reconnaissance tasks for the army, and they thus contributed mightily to the early success at Vimy Ridge and elsewhere. By contrast, and despite the bloody impact of the Jastas on the RFC, German air-ground co-operation was noticeably less effective than on the British side.

Developments in 1918

By 1918, close air support using fighters such as the British Sopwith Camel to strafe and bomb enemy infantry and artillery units was making a valuable contribution,

either in disrupting German attacks or supporting Allied offensive action, though it was also recognised as being costly in aircraft and pilots. The CAS role came to the fore during the German Spring offensives of 1918, when the newly-formed RAF played a significant role in stemming the initial German successes. The Germans had introduced dedicated ground attack designs and squadrons *Schlachtstaffeln*, which were not noticeably more effective. Subsequently, at the Battle of Amiens of 8-11 August, the RAF provided significant direct support during the early phases of the battle and some, though not all, of its interdiction effort was also effective.[5] The failure properly to plan the joint battle, and in particular to exploit air's potential fully to turn a defeat into a rout, stemmed again in part from a continuing failure to integrate air power into the formulation of the plan, rather than extemporising or grafting it on to a pre-formed army scheme as an afterthought. The Germans had made exactly the same mistake prior to their Spring offensives.

The Allies in 1918 were also increasingly exploiting the flexibility of air power to reinforce each other: first to help stem the German offensives and latterly for their own attacks. During the American offensive at St. Mihiel in September 1918, the U.S. First Army's air service units were commanded by the charismatic if difficult 'Billy' Mitchell. Of the 51 squadrons directly under Mitchell's command 21 were French, but the Allies added a further 55 squadrons, 47 of them French and eight British, meaning that less than a third of the supporting squadrons involved were American. The French also centralised a considerable element of their air assets in a *Division Aérienne,* which they could deploy en masse to reinforce local air units and it provided the bulk of Mitchell's 1400 plane strike force at St. Mihiel.

Conclusion

Throughout the war both sides waged a constant technological battle to produce superior aircraft. The size, power-to-weight ratios, speed and capability of the aircraft in service in 1918 were incomparably superior to those of 1914, with multi-engined bombers entering service capable of lifting bombs of 1000lbs or more. By contrast, the RFC's early aircraft with 70-90hp engines had struggled to lift a military load including both a 75lb radio and an observer and frequently one or the other was left on the ground. These increases in the size, power and range of aircraft led directly to the first attempts at exploiting air power strategically. Although outside the scope of this essay it was the German daylight bombing raids on London that led to a political and media outcry, which, in turn, led directly to the unification of the British air services in the Royal Air Force, founded on 1 April 1918. It was thus the recognition that warfare in the third dimension was a unique environment requiring specialist skills and understanding, combined with the recognition that defence of the nation's air space was now a fundamental requirement of national defence, which led directly to the establishment of the world's first independent air force.

The BEF's original 1914 air element of just four squadrons had expanded by November 1918 to a force of 1800 aircraft in 87 squadrons. The Allies as a whole had 5500 aircraft on the Western Front as the War ended. Some 4733 airmen from the RAF, RFC and RNAS died on the Western Front, of whom 2051 died in the last seven months flying with the RAF. Weighed in the scale of First World War British Army casualties these figures may seem infinitesimally small, but with only 1600 pilots on the Western Front on 1 August 1918 they represent a very high aircrew casualty rate such that, for example, No 80 Squadron averaged 75% casualties per month for the last ten months of the War. By the time of the Armistice on 11 November 1918, the Allied air forces represented a critical component of combined arms warfare, essential to successful offensive and defensive operations, but their success often came at a high price.

Seb Cox

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[5] See Gary Sheffield's account of the Third Battle of Amiens at Chapter 26.

32. The Development of Artillery on the Western Front

Introduction

The First World War was a sustained battle of firepower and attrition: mostly from artillery guns and howitzers, but also from rifles, machine guns, mortars and tanks. Technology evolved rapidly throughout the conflict. The committal of very large bodies of troops, employing new weapons and new tactics, led to the emergence of a new operational level of warfare that linked tactical actions to strategic ends.[1] By harnessing technology and innovative tactics, and by fighting at this level, artillery dominated the Western Front for most of the war. It is thus not surprising that all sides witnessed an exponential growth in artillery. This was not just reflected in the number of guns, but also in the reach and influence of gunner officers as they orchestrated firepower and movement. It was this integration that led to the evolution of tactics, which would become 'Combined Arms'. In just 50 months, fighting would change from largely Napoleonic in style to that recognizable in 1939.

As trench warfare developed, all combatants became more interested in firepower as it allowed the firefight to be fought at extended ranges. Artillery played its part alongside the other arms and services. Within the British army, the Royal Engineers supported with mining and survey while the Royal Flying Corps (and from 1 April 1918, the Royal Air Force) supported with reconnaissance and air Observation Posts. The Army Ordnance and Army Service Corps handled ever-rising volumes of artillery ammunition and other supplies. The increasingly better armed infantry (with trench mortars, light machine guns and rifle grenades) and the Tank Corps contributed to firepower. The evolution of artillery on the Western Front provides a handrail to wider developments in the war, be they tactical, technical, mechanical or industrial. Thus the story of artillery during the First World War is fundamental to a comprehensive understanding of that conflict from the home to the battlefronts. Although this account concentrates on the British experience, many parallel developments took place in the French and German armies.

What does Artillery do?

Artillery has many roles and definitions, but in essence it can achieve three tactical or, more widely, operational effects. First, it fixes enemy forces and keeps them in a location that an attacking unit has planned for. This fixing effect is caused from either neutralization[2] or suppression[3]. Secondly, it causes a level of destruction[4] that denudes the enemy, reducing the number of effectives. Thirdly, the indiscriminate manner of indirect fire causes a psychological effect on enemy troops and is a leading element in shattering their will to fight. Progressive developments to artillery enhanced these three effects: suppression, destruction and psychological dislocation.

During the course of the war, an emphasis on destruction shifted to that of neutralization caused by quick 'hurricane' barrages that would precede the attacks in 1918 (see the box on Alanbrooke). Associated developments included dummy fire-plans for deception purposes, and the use of smoke. As the style of warfare changed, so did the artillery deployment on all sides. For the field artillery, the forward slope deployments of August 1914 (alongside the infantry) were within a few months exchanged for gun pits three kilometres behind the reserve line. Guns gained range in order to engage enemy reserves, and as accuracy increased, the shock action of a sudden bombardment resulted in a fixing effect.

The Guns

With the exception of siege artillery, most guns on all sides at the outbreak of the war fired relatively small, light shells over short distances. Gun detachments could sight their own enemy and engage without direction. Field guns fired relatively flat trajectories ranged to only a few

[1] Editor's Note. The origin of 'operational level' thinking is usually ascribed to Soviet military writers of the 1920s. For details, see, for example, Richard W. Harrison, *The Russian Way of War: Operational Art, 1904–1940* (Kansas: Kansas University Press, 2001). However, there is also evidence to suggest that German thinking in this area goes back to the time of Moltke the Great, as argued by Gerhard Groß, *Mythos und Wirklichkeit: Geschichte des operativen Denkens im deutschen Heer von Moltke d.Ä. bis Heusinger* (Paderborn: Ferdinand Schöningh, 2012). (I am grateful to David T. Zabecki, editor of the forthcoming (2016) English translation, in drawing my attention to this work.)

[2] A target is neutralized for an enduring time by destroying a small percentage of its equipment, facilities or men, but it is a level of degradation below that of destruction.

[3] An enemy may be suppressed for a specific amount of time. The effect only lasts while shells are falling or they threaten to fall.

[4] Destruction occurs when a target can no longer function in the way intended. For example, an infantry company would be considered destroyed when more than 33% of its men were incapacitated.

kilometres. The 13- and 18- pounders of the Royal Horse and Field Artillery, for example, were mobile and accurate, but simply lacked punch for the fortifications that would evolve. As the war went on guns of increased their calibre and weight of shell were introduced. Shells such as the ubiquitous 6-inch contained more explosives and created more fragments, both of which contributed to the effect. This is not the place to list all guns used in the war but the battle winners included 60-pounder guns and 6-inch (152 mm) howitzers that fired up to ten kilometres but produced four to five times the blast and fragmentation effect of the 18-pounder.

The gun arms race eventually lead to the use of maritime guns placed on railway carriages and the apex of this development curve was the German Paris gun of 1918 with a range of 130 kilometres. These huge guns were not accurate and fired a relatively light shell of just over 100 kilogrammes. However, with a slow rate of fire, mechanical frailties and inherently inaccurate they were more a psychological weapon than one to be brought to the tactical battle.

The Shells

The evolution of the shell throughout the war reflects the speed of artillery technological development. British Gunners started the Great War with shrapnel rounds and some High Explosive (H.E.) rounds, but the majority were shrapnel. This shell had a thin outer casing and contained ball bearings and a detonating charge. It was exploded above enemy infantry and the high velocity balls would act as a large shotgun shell and hit unprotected targets. However, very quickly the enemy took cover and the utility of true shrapnel shells diminished. Simultaneously, the 1914 H.E. shell was ineffectual. It fragmented into far too few pieces and its fragments had too low a velocity. Their large size seemed dangerous but the chance of being hit by a piece large enough to wound was low. New H.E. shells that fragmented into far smaller and more lethal pieces were introduced. The Shrapnel shell almost fell out of service as the war went on as the H.E. shell could produce both anti-structure and anti-personnel effects.

Even though large shells impacted with plenty of kinetic energy and detonated with significant sound they had little blast effect due to simple physics. Any force originating from a single point diminishes in all directions and hence to a factor of "cube", i.e. to the power of three. Therefore what was a significant blast at the point of impact has diminished by 33% after one metre and by 99% after two metres. As well as H.E. and Shrapnel, other ammunition types were introduced. The use of a hollow shell that could be filled with various chemicals turned night into day with the illuminating shell and also lead to the emergence of chemical warfare. The same shell body that could deploy burning phosphorus for night time illumination under a cotton parachute could also deploy gas canisters full of mustard or chlorine gas. These shells were used to fix the enemy and reduce their ability to resist.

Organization

At the beginning of the War, the Royal Regiment of Artillery was split into three distinct branches. The *Royal Horse Artillery* was equipped with light and mobile 13-Pounder Quick Fire (QF) guns that primarily provided the firepower to support the cavalry. The *Royal Field Artillery* was the ubiquitous part of the Gunners and provided the 18-Pounder QF guns and 4.5-inch howitzers that deployed close to the front line and provided the bulk of the fire support to the infantry divisions. Lastly, the *Royal Garrison Artillery* contained the heavier and less mobile guns and howitzers that were deployed well behind the front line and had immense destructive power. They would latterly be task organized to fight the counter battery battle. Groups of four or six guns made a gun battery. Four batteries made an artillery brigade, which is confusing as it is not a contemporary infantry brigade size, but what would today be referred to as an artillery regiment in the British army – a battalion in other armies. The Gunners started the war belonging to the infantry divisions with

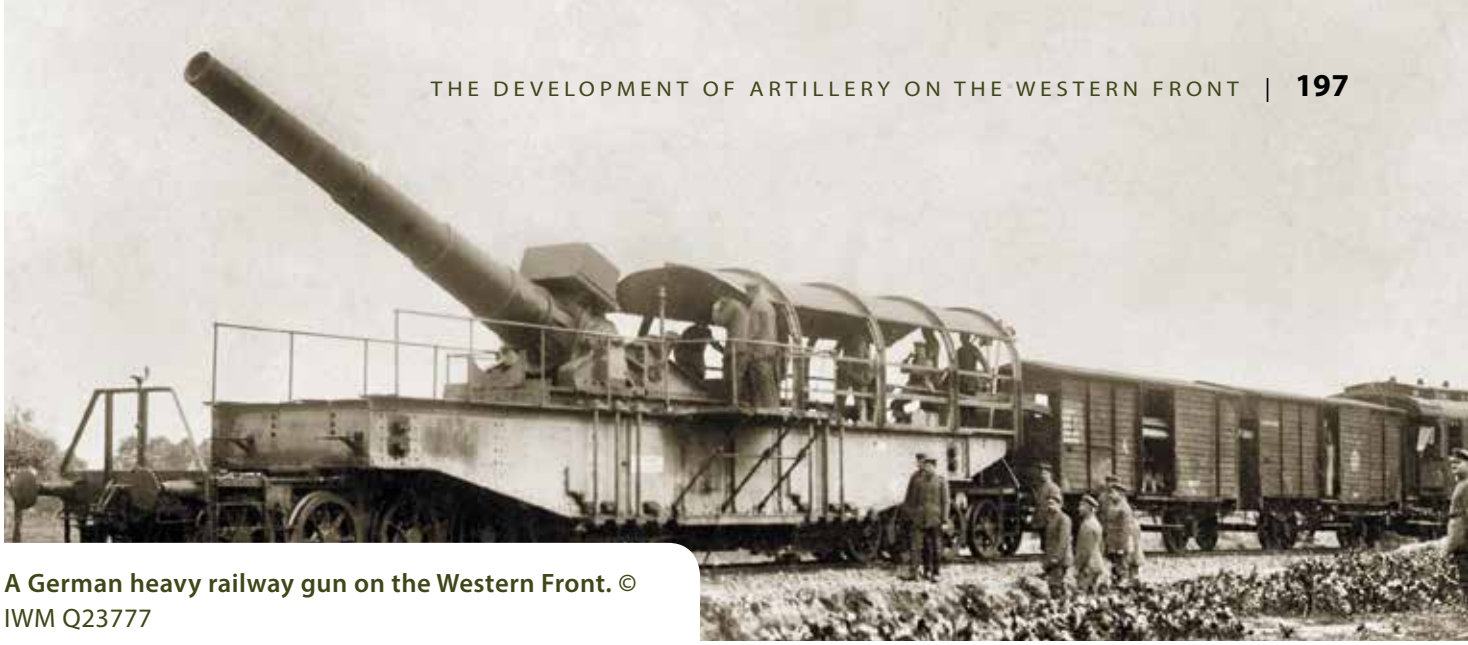
Expansion of the Royal Artillery during the First World War

	Officers	Other Ranks	Gun Batteries
August 1914	4,083	88,837	554[5]
November 1918	29,990	518,790	1,796[6]

At the time of the signing of the Armistice in November 1918 there were 6,437 guns and howitzers in service in France alone.

[5] This is the total number of RA batteries worldwide notionally available to be called to the Western Front.

[6] This is the number of gun batteries deployed on the Western Front in late 1918.



A German heavy railway gun on the Western Front. © IWM Q23777

artillery advisors; by it send, they served in their own formations under the command of artillery generals: in doing so they provided not only intimate support but also massed guns for maximum effect.

What was Achieved?

In common with their French and German counterparts, British Gunners were confronted with a raft of problems in 1914 that would be addressed over the coming years. They had to locate their opponents accurately and then be able to fire at them consistently. They had to be far enough forward to keep their own attacking troops in range but far enough back to be out of range of the majority of enemy guns. They had to develop a logistical system that brought the vast numbers of shells, fuses and charges forward in a manner that could keep up with demand. They had to develop a system of neutralizing the enemy guns in a predictable manner. But fundamentally their biggest challenge was interpreting the needs of the infantry and settling on a suitable plan to support their movement. Barrages had to be accurate, flexible and sufficiently destructive to support manoeuvre but without causing further problems by destroying the ground over which the infantry would move. All of this was achieved by mid 1917 and put into practice in 1918.

Technological Developments

In order to support the infantry, British artillerymen needed to address their equipment issues. The first and in many ways most significant change was in developing a fuse that was reliable in the soft ground of much of the Western Front. The L106 fuse entered service in spring 1916 and immediately increased the lethality of the guns by a factor of 40%. Its design allowed the fuse to function immediately it hit the ground rather than milliseconds afterwards when blast and fragments would be diminished by the earth as the shell buried into the ground. The new fuse allowed more shell splinters to reach the enemy and for more of its blast to be imparted on to structures or wire obstacles. Previously only 60% of shells had detonated due to poor fuses. Now 99% of shells detonated and immediately caused more destruction for no more logistical burden or increase in guns. The L106 fuse was so sensitive that it would detonate as soon as it touched barbed wire and hence the main barrier to infantry movement was now breakable.

Technology also improved gun design by changing recoil systems, breach mechanisms, the calculation of firing data and the reliability of the weapon system. All these factors improved reliability and accuracy and hence provided more guarantee to the infantry. However, the single biggest technical British innovation of the war was the invention and exploitation of sound ranging. By listening for the distinctive sound waves generated by high explosives, sound rangers could locate the enemy guns. This allowed an accurate grid location to be passed to our own artillery, which could fire back en masse and destroy enemy guns with their first few rounds. This method allowed British observers to plot the fall of their own fire and then work out the difference between their point of aim and that of the fall of shot. This technique became known as registration, which significantly increased lethality and reduced the logistic burden by achieving more with fewer rounds. It also enhanced the element of surprise and meant that infantry attacks were no longer predictable by the enemy due to a preceding lengthy barrage.[7]

None of this progress would have been possible without the evolution of survey and the generation of accurate grids for our own guns and predicted grids of the enemy

[7] By 1918, the Germans were also using the same techniques, and had established both specialist *Lichtmesstruppen* [light-measuring (flash-spotting)] and *Schallmesstruppen* [sound ranging] troops.

[8] See Chapter 35.

targets. Better survey through better maps increased first round accuracy, all thanks to the work of the Royal Engineer survey parties.[8] The final piece on the jigsaw was the development of spotting, the art of adjusting fire onto the desired point of aim. The technical skills required to do this at range evolved quickly and improved lethality and again reduced the logistic burden. These skills are known collectively as target acquisition and were supported by observation techniques such as the use of aircraft and tethered balloons, whose corrections could be communicated to the guns.

Developments in Tactics and Command

Regardless of the technical and tactical changes, the most fundamental development by the Royal Artillery was the doctrinal emphasis on support to the manoeuvre force. Before the war, the artillery was a relatively junior partner on the field of battle. By the end of the Great War the stock of this arm had risen hugely, as stated by General Ferdinand Foch in 1917 when he said, '*The infantry occupies, but the Artillery conquers'.* However this much-misused maxim is bettered by the more meaningful quotation from Brigadier Bidwell *'In peace the call is for mobility, in war the call is for firepower'*.

The British Artillery in 1914 was under command of the infantry divisions, so that the infantry brigades and gun batteries were locally dispersed. This allowed good local control but prevented the concentration of guns when large enemy targets were found and maximum firepower was required. Thus, in order to be able to mass artillery, almost half of the field artillery guns were taken out of divisional control and placed under corps or army command by Royal Artillery generals by the end of 1916. Commanders Royal Artillery (CRA) took charge of planning barrages, ammunition supply and supporting the manoeuvre plan. Placed at all headquarters, these senior Gunners facilitated the development of plans that could be supported effectively by artillery.

The Gunner Generals now took command of their guns and acted as advisors to the manoeuvre commanders. They were empowered to veto unsupportable plans and generate a concentration of firepower by moving their gun units to the most suitable positions. Concurrently, they absorbed the ammunition trains into the gun regiments and thus took full command of the provision of indirect fire. For battles such as the Somme in 1916, artillery commanders could influence the plan and then support the Main Effort. Prior to this there had been too little cooperation and insufficient understanding of what had to be achieved. It was the Gunners' ability to quickly switch their fire or to concentrate it, or simply to stop firing, that enabled fluid manoeuvre and flexibility to dislocate the enemy. The tactical handling of artillery developed quickly once the symbiotic relationship flourished. It was the intimate liaison that lead to the first rolling barrages that matched the advance of the infantry divisions and most importantly were not fixed or pre-set, but adaptable to the local situation. This method was enabled by vastly improved communications and a set of contingency plans for quicker or slower assaults.

A further development by the field artillery was that of the creeping barrage: a curtain wall of shellfire that was aimed just in front of the advancing British infantry that moved slowly forward in synchronisation with the infantry. The usual rate was of 100 yards every four minutes. British infantry was instructed to stay as close to its own creeping barrage as possible, known as 'leaning into the barrage'. The rule in 18th Division of 1916 was if you were taking casualties from being too close to your barrage then you were correct. Better this than allowing the defender to use those critical moments to take post and engage the attacker before battalion firepower could neutralise him.[9]

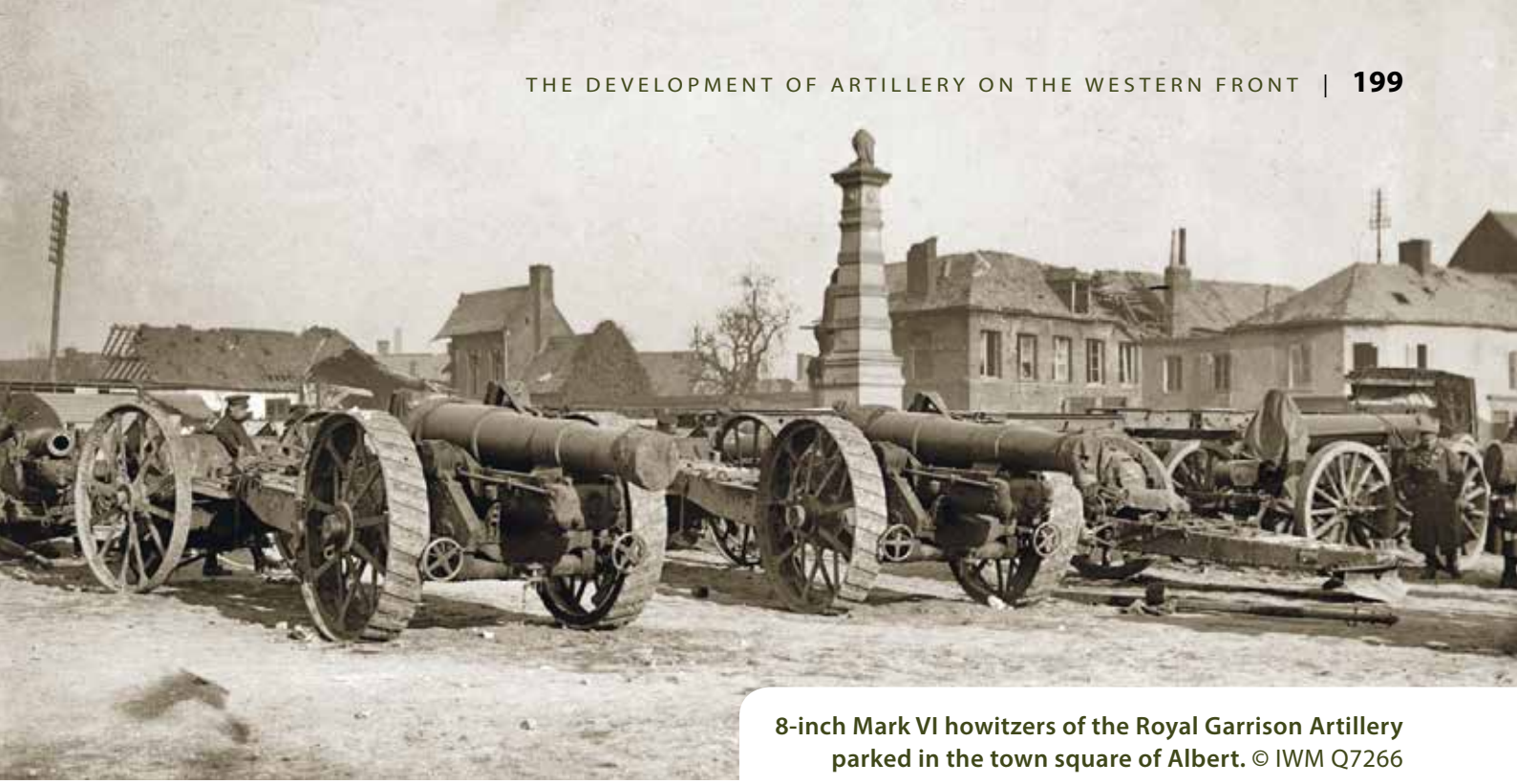
The last tactical development of the War was the creation and systematic use of the 'hurricane' bombardment. Used many times in isolation far earlier in the war the hurricane bombardment was short but concentrated. It lasted only a few minutes and gave the enemy no chance to move reserves into position. This style of bombardment lead to the success at Cambrai in November 1917 as German forces were taken by strategic surprise on day one of the offensive.

The Winning Formula

The final development was the joining of the technical and tactical changes. By the battle of Cambrai in November 1917 the British Gunners had reached their peak.[10] French and German developments and progress were very similar. Guns could now provide quick and accurate fire due to the vastly improved manufacture of the shells and fuses. Accuracy was greatly improved as artillerymen now accounted for gun barrel wear, changing muzzle velocities, and shell weight and charge temperature. This data was correlated with meteorological factors to enable accurate and consistent indirect fire.

[9] Arguably, on the Somme on 1 July 1916, 29th Division's attack failed in part because of not keeping close enough to their artillery barrage, while 18th Division succeeded.

[10] See Chapters 18 and 30.



8-inch Mark VI howitzers of the Royal Garrison Artillery parked in the town square of Albert. © IWM Q7266

Gunners could open fire on enemy guns without firing any ranging shots. They could mass their own guns and overmatch the enemy. They could simultaneously destroy the wire defences and the hardened enemy machine gun positions. They could subsequently roll a barrage of fire forward in perfect time with the planned advance of the infantry divisions. The barrage could advance, retreat or lift at any position for any period of time. Guns could mix high explosive shells with smoke for maximum deception and could fix enemy movement at night by providing illumination. Gunners could achieve all this whilst protecting their own guns by continuous movement and flexible logistic support. This was all possible due to the artillery advisors at battalion, brigade, division, corps and army levels of command.

Conclusion

The coincidence of a technical revolution and tactical application thrust the Royal Artillery into the forefront of doctrinal change within the BEF. All sides experienced a very considerable growth in the numbers of guns, and in the quality of fire support. British, French and German artillery facilitated manoeuvre by the adroit application of firepower to destroy, deceive, suppress and harass their opponents. In doing so they enabled the infantry to close with the enemy and defeat them. It was a battle of technologies, techniques and wills in which artillery forces on all sides fought for dominance.

James Cook

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Lieutenant Colonel Alan F. Brooke, RA, (1883-1963)

Lieutenant Colonel Brooke RA is better known to students of the Second World War as Field Marshal Lord Alanbrooke, KG, was one of the BEF's most innovative fire planners. Nicknamed 'Colonel Shrapnel', he is credited with introducing the creeping barrage during the Battle of the Somme in 1916. In 1917 he developed the fire support plan for the Canadian Corps at Vimy Ridge. Between 1924 and 1927 Brooke wrote a remarkable eight-part series of articles on 'The Evolution of Artillery in the Great War' for the Journal of the Royal Artillery. The four-phase 'Brooke Model' is the most concise explanation of the development of artillery tactics and technology experienced to varying degrees by all sides in the Great War.

Inadequacy 1914

Most armies entered the war regarding artillery as strictly an auxiliary arm whose job was to assist the infantry in the attack. The pre-war doctrine of high mobility required that the guns used by field artillery be mobile, which meant light. All nations were armed primarily with light flat-firing field guns. But the German 77mm, the Russian 76.2mm, the American 3-inch, the British 18-pounder, and the famous French 75mm were all too light to have any real effect against well-prepared-field fortifications. Once these guns were forced to move back from the front lines, they lacked the higher trajectories necessary for indirect fire, especially in rougher terrain.

Experimentation and Build-up 1915

Stalemate set in on the Western Front, and all sides spent most of 1915 scrambling to develop new fire support techniques and new ordnance, especially howitzers. In the early part of the war the fire direction procedures for indirect fire were cumbersome and slow. One solution to the problem was the establishment of phase lines on the ground to control the shifting of fires. The system was slow and rigid, but it worked and was relatively simple. By 1916 on the Western Front the standing barrages had evolved into the creeping barrage, with the advancing infantry following closely behind a steadily moving wall of friendly artillery fire. But as the troops were trained to follow in straight lines behind the barrage, infantry commanders at all levels began to ignore terrain, and the old pre-war linear tactics returned in a new form.

Destruction 1916-1917

During the period of tactical stagnation artillery on both sides became a blunt instrument for indiscriminately pounding large patches of ground. The main functions of artillery became destruction and annihilation--destroy the attacking enemy before they reached friendly lines, and destroy the defending enemy before attacking friendly troops reached the hostile positions. Special emphasis was placed on obliterating the enemy's fortifications, with artillery expected to cut his barbed wire. The artillery preparations grew longer and longer, lasting days and even weeks. Military leaders on both sides convinced themselves that the more HE shells they dumped onto an objective, the easier the infantry's job would be. The long preparations, however, actually caused more problems for the attacker. Typically, the defender was able to withdraw his front-line infantry entirely from the area being shelled, reinforce it, and then re-insert it as soon as the fire lifted. The long preparations also tore up the terrain the attacking force had to cross, and made it almost impossible for the artillery to follow in support.

Neutralization 1917-1918

Throughout the course of the war leaders on both sides and at all levels searched for ways to improve tactics and break the deadlock. The key to the new fire support thinking was the realization that artillery fire was more effective when its tactical effect was neutralization rather than destruction. The idea was to stun the enemy and pin him in place just long enough for the attacking infantry to get on top of him. Gas, both persistent and non-persistent, was an especially effective neutralization munition that did not tear up the ground. When the Germans combined their new infiltration, or 'Stormtroop' tactics, with the artillery neutralization tactics developed by Georg Bruchmüller, the result was the coordinated integration of fire and manoeuvre – the foundation of all modern tactics.

David T. Zabecki

33. Tanks in the First World War

Introduction

The tank was a British innovation designed to break the deadlock in the trenches. It took about a year for the new armoured fighting vehicle to be invented; a period spanning the formation of the Admiralty Landships Committee in February 1915, by Winston Churchill, to the first official demonstration of Mother, the prototype tank, at Hatfield Park in January 1916. Nine months later the first production tanks were ready for combat.

Tanks were launched into battle for the very first time on 15 September 1916, as part of a follow-up action, known as Flers-Courcelette, during the mighty Battle of the Somme, which had begun on 1 July 1916.[1] Out of 49 Mark I tanks scheduled to take part, only 32 were able to go into action. Of these, nine got ahead of the infantry and achieved something; nine failed to keep up but did useful work against strongpoints that had been by-passed; while fourteen others either broke down or got themselves stuck. Although tanks were not the main feature of the battle, and only an adjunct, it resulted in an impressive number of gallantry awards to the crews.[2] Further actions over the next few weeks increased the medal count, but apart from a couple of notable actions achieved relatively little. The very first tank action at Flers may not have been the success that General Haig and others had hoped for. Inexperienced men, crewing a novel weapon, over an alien landscape was not the ideal combination: but it was enough to convince Haig that tanks had a future and they were here to stay. There were some small tank actions over the next two months, not amounting to much in themselves, but one or two achieving astounding results.

Tank Actions of 1917

The next tank action on the Western Front took place in atrocious weather at Arras in April 1917. In the meantime, the Heavy Branch, Machine Gun Corps had moved to Bovington in Dorset and set up home, while eight tanks, some badly worn with training, were shipped out to Egypt to see action in Palestine. The Arras action included eight tanks, sent in support of the Canadian attack on Vimy Ridge, all of which became bogged down and took no part in the fighting, while a four day initial bombardment handicapped the main action. At Bullecourt, on 11 April 1917 eleven tanks were earmarked to assist the Australians but became caught in the snow and the whole affair ended disastrously. As a result, the Australians were very disappointed in the tanks and would have nothing further to do with them, if they could help it.

In the meantime, the eight old Mark I 'training' vehicles took part in the Second Battle of Gaza, on 17 April, the first time tanks were ever used in a desert environment. Since the battle failed on all counts, the work done by the tanks on this day was effectively disregarded. The new, much improved, Mark IV tank was used in action for the first time at Messines on the Western Front in June 1917, but such success achieved by the new weapon was overshadowed by the explosion of nineteen huge land mines beneath the German positions which effectively won the battle.

On 28 July 1917, just before the next battle, what used to be The Heavy Branch, Machine Gun Corps, became officially the Tank Corps with a new cap badge, a title it retained until 18 October 1923. Then, amidst a deluge of rain that turned the landscape into a sea of mud, the Third Battle of Ypres began on 31 July 1917.[3] Although 216 tanks were in use, their casualties were high and conditions appalling.

British Medium A Whippet tank near Amiens, August 1918. © IWM Q61426

[1] See Chapter 12.

[2] One Distinguished Service Order; seventeen Military Cross; fifteen Military Medals; and three Distinguished Conduct Medals.

[3] See Chapter 16.

British Mk V female (machine-gun) tank, introduced in 1918. © IWM Q14478

J. F. C. Fuller described the action as 'a complete study of how to move thirty tons of metal through a morass of mud and water' and the disappointing results, predictably, turned many against the tank. One interesting event, linked to Third Ypres, which never happened, was a proposed amphibious landing on the Flanders coast, which would have resulted in nine tanks being put ashore to advance on Passchendaele. There is just one outstanding success story from this period. The action known as 'The Cockcroft' on 19 August 1917 pitted nine tanks against a nest of German pillboxes around what remained of the village of St Julien. It was highly successful: all objectives were taken for a butcher's bill of fifteen wounded among the infantry against an anticipated six thousand casualties. Third Ypres continued into early November and included further tank actions, mostly unsuccessful. But wonderful things were soon to follow.

The Third Battle of Gaza, still involving eight tanks, now Marks I and IV, contributed to General Allenby's capture of Jerusalem on 4 November 1917. Tanks worked well with the infantry and achieved more than was expected of them.

By launching a surprise attack across good ground with a minimal preliminary bombardment, tanks from nine battalions, lined up over a wide front swept forwards across open ground against the Hindenburg Line at the opening of the Battle of Cambrai on 20 November 1917.[4] By the evening of the first day the tanks, using special fascines and a tactical drill worked out by Fuller to cross the broad trenches of the Hindenburg Line, had penetrated 15,000 yards on a 13,000 yard front; on the second day tanks were used with some success to deal with occupied villages and German strongpoints. The Battle of Cambrai, however, went on for much too long. Tanks were employed for the final time that year on 1 December 1917, by which time the crews were exhausted and the tanks worn out. A powerful German counter-attack, without tanks, had recaptured much of the ground taken.

Tank Developments in 1918

In 1918 the Tank Corps took on a new kind of tank, the lighter and faster Medium A Whippet, but the anticipated mass German attack inhibited further tank actions. As a result, since tanks can't be everywhere at once, most crews were dismounted and formed into three-man Lewis gun teams to fight attacking infantry. There were some tank actions but only two worth reporting, both of which took place on the same day, 24 April 1918. Near Villers-Bretonneux a British Mark IV male tank engaged a German A7V in the first ever tank against tank action.[5] The fight was more or less won by the British tank, although it was knocked out soon afterwards, but nonetheless the German tank was hit and subsequently abandoned. A short distance away, seven Whippet tanks of 3rd Battalion caught two German infantry battalions in a meadow and decimated them – twenty-one men under armour against 2,000.

The next tank action, on 4 July 1918, was the Battle of Hamel, which was the first operation that featured the

[4] See Chapter 18.

[5] Described in more detail at Chapter 21.

new Mark V tank. A most successful action, it restored Australian faith in the tank. On 23 July, Mark V tanks were used again, by 9th Battalion, in support of the French at Moreuil. It was not the first time the Tank Corps had worked with the French. On 11 June, Austin armoured cars of 17th Battalion were sent to assist, but road conditions proved to too bad for them. Moreuil, on the other hand, proved a great success and resulted in the entire battalion being awarded the Croix de Guerre.

The Battle of Amiens, which began on 8 August 1918, marks the start of the so-called 100 Days, leading up to the Armistice. Some 550 tanks of all types took part including Mark V, the longer Mark V star, Whippets, Gun Carriers serving as Supply Tanks and of course the remarkable Austin armoured cars. It is a difficult battle to describe because it includes a series of lesser battles that seem to continue for a month or more. Suffice it to say that by shifting the emphasis of his attack from one front to another Haig maintained pressure on the Germans who were obliged to retreat. One notable event of the first day was when Lieutenant E. J. Rollings took an armoured car into the occupied village of Framerville and nailed an Australian flag to the front door of the German Corps Headquarters. Amiens was referred to as the black day of the German Army and if they had known it, the war was effectively over. Even so Amiens proved that Whippet tanks and cavalry could not work in harmony and that, in reality, faster tanks such as the Whippet were cavalry in a new guise. Also attempts to carry infantry in the longer bodied Mark V Stars failed because nobody other than members of a tank crew could survive for any length of time inside a tank because of the fumes and noise.

A second Battle of Cambrai was fought on 27 September 1918, marking the fact that the German advance of March/April 1918 had covered so much ground. Second Cambrai was characterised by long approach marches that were beyond the powers of older tanks and the crossing of the dry, but formidable Canal du Nord, where the tanks had to undertake a difficult climb to get out. The battle resulted in the capture of Bourlon village, which had not proved possible in the 1917 battle. Early in October the second fight between tanks occurred. Here the Germans were also using British tanks, captured at Cambrai, in action against Mark IV tanks of 12th Battalion which also ranks as a British success. By this time, only two Tank Corps battalions, the 7th and the 12th, were still using Mark IV tanks which they did until the end of the war. By now the number of serviceable tanks available to the British was diminishing rapidly. Most of these later actions were conducted on a relatively small scale and involved river crossings, with many attendant difficulties. The last tank action of all took place on 5 November 1918, just six days before the Armistice. Six Whippet tanks of 6th Battalion supported 3rd Guards Brigade, which forced another German retreat.

French Renault FT17 light tanks of U.S. 326th Battalion near Bourevilles Meuse, 1918. © IWM Q72560

French St. Chamond heavy tanks passing through the village of Nissy-sur-Aisne. © IWM Q56409

British Tank Statistics

First Cambrai, 20 November 1917: 476 tanks including supply, wire cutters and special duties. Amiens, 8 August 1918: 552 tanks, including Supply Tanks, Wireless Tanks and 96 Whippets, plus sixteen armoured cars. Second Cambrai, 26 September 1918: 175 fighting tanks plus 104 Supply Tanks and Gun Carriers, plus sixteen armoured cars. A total of 3031 British tanks was built during the First World War; many of which were used for training, others were either prototypes or were produced too late to see action.

French Tanks

The first French tank to see action was the Schneider Model C. A., which ran on American Holt-like suspension beneath a box-like superstructure. It lacked the all-round tracks typical of British designs and consequently lacked their cross-country performance. Four hundred were ordered but production was terribly slow. They were not ready for action in sufficient numbers until 16 April 1917, when they spearheaded an attack along the Chemin des Dames.[6] This was successful although casualties among the tanks were high. Meanwhile, official military designers were developing a rival design, known as the St. Chamond. It saw action for the first time on 5 May 1917, where many got stuck in the German trenches. Described by one observer as a 'kitchen range on tracks', the St. Chamond featured an even larger body on a Holt-style tracked chassis along with the heavy petrol-electric drive. Once again 400 had been ordered and both types remained in service, in diminishing numbers, until the end of the war. The French also tended to employ these tanks as mobile artillery, rather than for wire crushing and infantry support.

France later went on to build thousands of the eminently successful Renault model FT-17, a two man light tank, the first to be fitted with a rotating turret. They first saw action on 31st May 1918 at a time when trench warfare was more or less over. The Renault had poor trench crossing ability but used en masse in open country it was much more successful. It was also used by the United States Army in France and became a great export success after the war.

German Tanks

The evolution of the German A7V and its first combat with British tanks is described by Geoffrey Vesey Holt in Chapter 21.

David Fletcher

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[6] See the account of the Second Battle of the Aisne (the Nivelle Offensive) at Chapter 14.

34. The Development of Military Engineering on the Western Front (1914-1918)

Introduction and Scope

The British Expeditionary Force (BEF) on the Western Front had simultaneously to fight an unfamiliar type of war and expand from a small, professional colonial warfare-focused force to a mass, grande guerre army. Meantime, with military technology favouring the defence, it had to learn how to operate and to sustain itself in an offensive posture under the imperative of evicting the invader from France and Belgium.

The enduring role of the British army's Corps of Royal Engineers (RE), the Sappers, is to enable the army to live, move and fight. A particular feature of the campaign on the Western Front was the high proportion of the total engineer effort devoted to the first two of these tasks, given that the host nations could spare little of their own war effort to support the British. Largely static warfare meant that provision, and repair and maintenance, of the 'live' and 'move' functions was a matter not just for rear areas but for the combat zone as well. Historically, the RE had provided the seed-corn from which had sprung much of the army's technical innovation. While some offspring had recently flown the nest (the Air Battalion RE had hatched into the Royal Flying Corps in 1912), others remained under the RE wing (the Signal Service until 1920). New capabilities emerged in the course of the War, including offensive chemical warfare, locating artillery and searchlights. Individual Sappers such as Major General Sir Ernest Swinton played important roles in the development of the tank.

Attitudes

The military engineer of 1914 was an improviser – not in the sense of making the best out of a bad job, but deliberately. The legacy of decades of Imperial soldiering in barren areas with no infrastructure was that he was trained to improvise, to solve engineering problems using the most basic materials, the limited stores and equipment at his disposal, and the adaptive skills and hard labour of men. In 1914, the RE was the arm of the British army least conditioned to the demands of continental warfare. Sapper work prior to the war usually involved sub-units spread over large areas on tasks unrelated to the combat arms, and geared to the availability of large amounts of local labour. The lack of such support in France and Belgium was to cause major problems and ill-feeling as 'resting' infantry were frequently called upon to fill the gap. Where labour was concerned the advantage lay with the Germans; their occupied territories yielded a ready source of impressed workers.

Lack of inter-arm integration gave rise to mutual misunderstanding, causing friction and inefficiency under the stress of war. Infantry commanders initially did not comprehend what their Sappers could do for them, and RE commanders did not know what the infantry wanted. Neither side knew the right questions to ask. This absence of understanding was reflected at the highest level of the army. The restructuring that followed the Esher Committee's reports of 1904 had removed the three-star Inspector-General of Fortifications and Royal Engineers, responsible to the Commander-in-Chief. His replacement was a one-star Director of Fortifications and Works, under the Master-General of the Ordnance. Thus there was no direct RE input to the General Staff, let alone one at senior level. This arrangement was not the best preparation for a conflict that would assume the character of siege warfare, and would call for engineering on an unprecedented scale in support of all levels of the army.

Close Support Engineering

During the mobile phases of the War (essentially 1914 and 1918) engineers of all armies carried out tasks which in terms of the 'what' of mobility and counter mobility differed little from today's practice, even if the 'how' was dictated by current technology.

When operations became static the Germans were better prepared for siege warfare, having planned to deal with numbers of French and Russian fortresses. After First Ypres, they redeployed their specialist weapons and materiel to the trenches. The British, having made no such provision,

improvised. Offensive siege warfare calls for concentrated offensive engineer effort. In the event, British engineer support was diffuse – and applied more to force protection than to the enhancement of offensive action.

Infantry commanders expected Sappers to dig and wire their positions, reinforce in the firefight, and to do little else. This matter resolved itself with learning on the job and better shovels for the infantry. Sappers took on more complicated trench engineering tasks such as dugouts, drainage and the first (wooden) trench tramways. Offensive tasks included constructing Russian saps (covered approach trenches) and digging hasty defensive positions or communication trenches. British trench engineering was never as solid as German; anything that smacked of permanence was discouraged as detrimental to offensive spirit. Some concrete positions were built in the defensive phase of late 1917 onwards, but neither in quantity nor the scale of the work did they approach German practice.

RE invention, production and supply capability was initially applied to the missing weaponry and materiel needs of trench warfare. The first hand grenades and mortars, of varying effectiveness and user safety, were improvised. Trench materiel – revetting, A-frame supports, duckboards, and plain timber – imposed perpetual tasks of manufacturing for RE tradesmen, of carrying for the infantry, and of destruction on the part of the enemy artillery.

Field companies, three per division from the end of 1914, provided close support; they were augmented by the divisional pioneers, an infantry battalion with some training in basic engineer tasks. Command of RE in a division was exercised by the CRE (Commander Royal Engineers). Specialist companies were found at corps level and above; a corps would have three or four 'army troops' companies, filling the role exercised by support squadrons today – stores, workshops, manufacturing, and rear area support tasks, (e.g. water supply – a massive commitment in a horse-dependent army). Corps might also own two or three tunnelling companies, a bridging park and labour units.

A Chief Engineer directed all engineering effort within the corps, with corps troops units commanded by a CRE. The corps engineer structure provided continuity; divisions were at times rotated through corps at a dizzying rate. The corps level organization was replicated at army, again with a Chief Engineer and a clutch of assorted units under CRE Army Troops. Behind the army rear boundaries lay the Communications Zone.

Mobility – Bridging

In 1914, all armies held pontoon bridging equipment of largely similar design, which had changed little since the Napoleonic Wars. By 1914 a mismatch was developing between the capability of in-service pontoon bridging and traffic requirements. Mechanical transport, increased weight of artillery, and an inability to move pontoons of sufficient load-carrying capacity by horse transport were contributory factors. RE went through the War with the inadequate Clauson pontoon, improvising as necessary.[2]

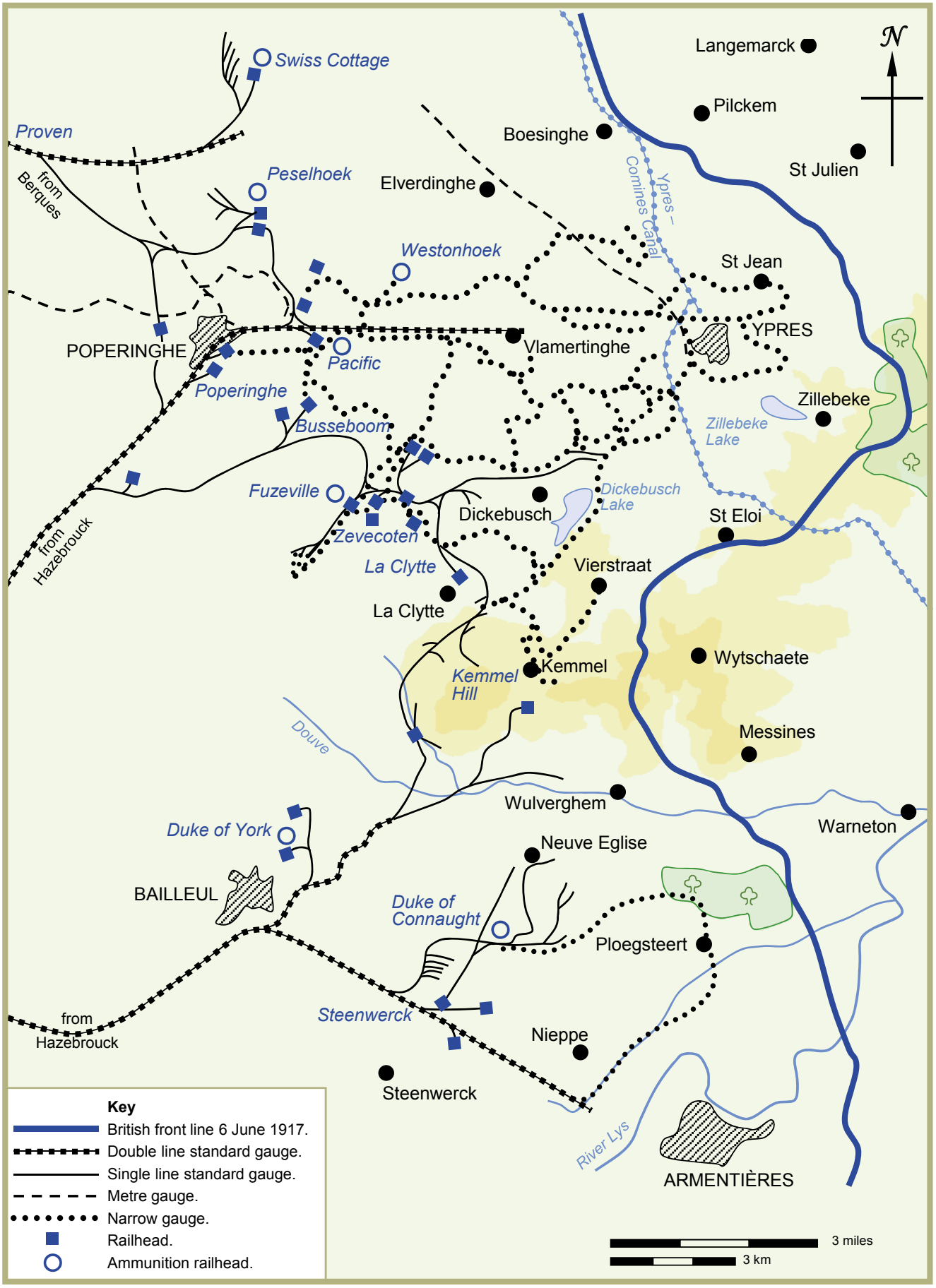
RE held no dry (clear-span) equipment bridging in 1914. Doctrine was to repair and use civilian bridges. After First Ypres the BEF found itself in a wet landscape, in need of large numbers of semi-permanent bridges for logistic bridging. The requirement was met by 'stock spans', basic steel bridges, spanning up to 85 feet. These and later bridging were designed against the increased loadings. The heaviest weapon in August 1914 was the 60-pdr gun at 4.5 tonnes; the 6-inch Mk VII gun weighed 17 tonnes, on a single axle. Tanks eventually pushed up loadings to 35 tonnes. In 1917 the Hopkins and the heavy Inglis Bridges entered service – the latter a genuine equipment bridge designed for rapid erection, which soldiered on into the 1939-45 War until the introduction of Bailey bridging.

In contrast with the Second World War, there were no operations involving the spectacular crossing of major waterways. The Marne, Aisne and Somme were the largest involving RE. Nevertheless tactical bridging was required in quantity for the BEF's move forward to the Hindenburg Line in early 1917, and above all for the advances of the Hundred Days of 1918.

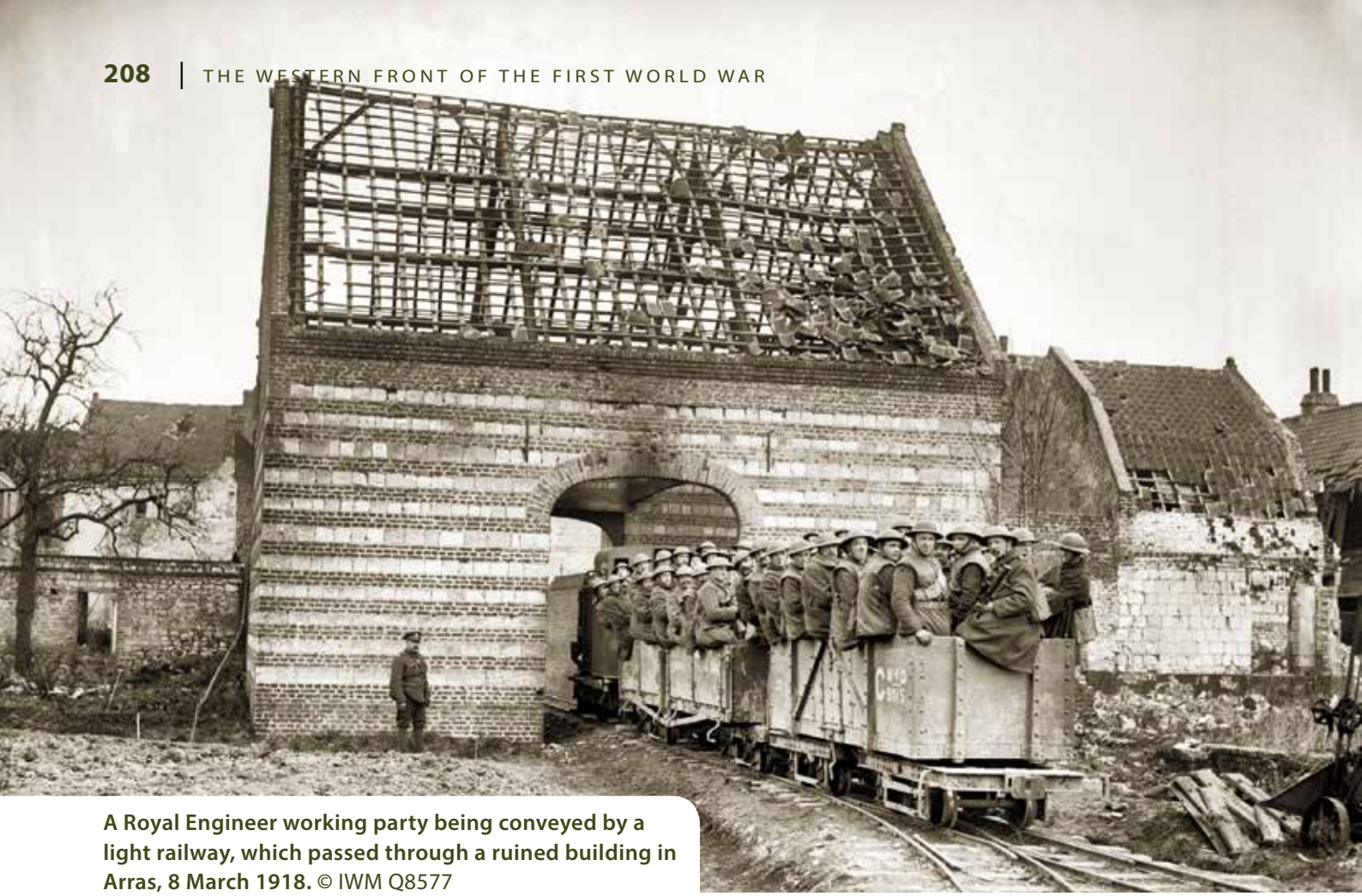
Mobility – Roads

The French road network was ill suited for the maintenance of an army. French pavé roads consisted of as little as 75mm thickness of hard surface. Pavement width was at best five metres, with an appallingly high camber, flanked by what can only be described as a 'soft shoulder'. Running two-way motor traffic on solid tyres on such roads was a challenge.

Road maintenance was an ever-running requirement, whether as a result of wear and tear or enemy action, calling for vast amounts of roadstone. New construction was often simpler than repair. Timber corduroy was widely used; plank roads proved popular, both for their smooth



Map 34.1 – British Second Army Railways and Railheads, June 1917



A Royal Engineer working party being conveyed by a light railway, which passed through a ruined building in Arras, 8 March 1918. © IWM Q8577

surface and their ease of building and repair. Duckboard tracks were essential for foot mobility – everywhere from the front line back to base.

Countermobility – Demolitions

Large-scale demolition plans were only implemented by the RE during the 1914 Retreat and the 1918 German offensives. They were bedevilled by the usual problems of equipment and stores on the one hand, and command and control matters on the other, the latter complicated by inter-Allied issues.[1] The result was incomplete obstacle belts and an inability to break clean, which, for example, forced the BEF to stand and fight at Le Cateau. The Germans conducted thorough denial programmes in their withdrawals; this generated extensive counter-IED work as well as physical clearance operations.[2]

The standard British demolition explosive was wet guncotton as a one-pound slab, initiated by safety fuze or electric detonator in a one-ounce dry guncotton primer. Guncotton was an adequate cutting explosive; black powder was still in use for borehole charges. For bulk and mined charges, aluminized ammonium nitrate (ammonal) was used.

Tunnelling and Mining

Initially, British tunnelling was reactive, to counter German mining activity. Personnel were drawn directly from the mining industries both in Britain and the Empire; a particularly valuable input was that of the 'clay-kickers' who had worked on the London Underground, using a digging technique that minimized noise and vibration and hence the probability of detection.[3]

In 1915-16 mine attacks by both sides were individual and uncoordinated. However, long-term plans by Second British Army for the recovery of the Messines Ridge based on a multiple mine attack were already being implemented.[4] The decision to attack at Arras in support of the French Nivelle offensive in April 1917 led to a massive underground warfare programme, both mining and the development of troop access tunnels under no man's land. The Arras attack was initially a major success, marred by the necessity of keeping the battle running to cover Nivelle's failure.

[1] Covered in detailed account of demolition of Compiègne bridge in Young, Maj B.K., 'The Diary of an RE Subaltern with the BEF in 1914', reproduced in *The Royal Engineers Journal,* Vol 128, No 3, Institution of Royal Engineers, Chatham, December 2014, p.173 ff.

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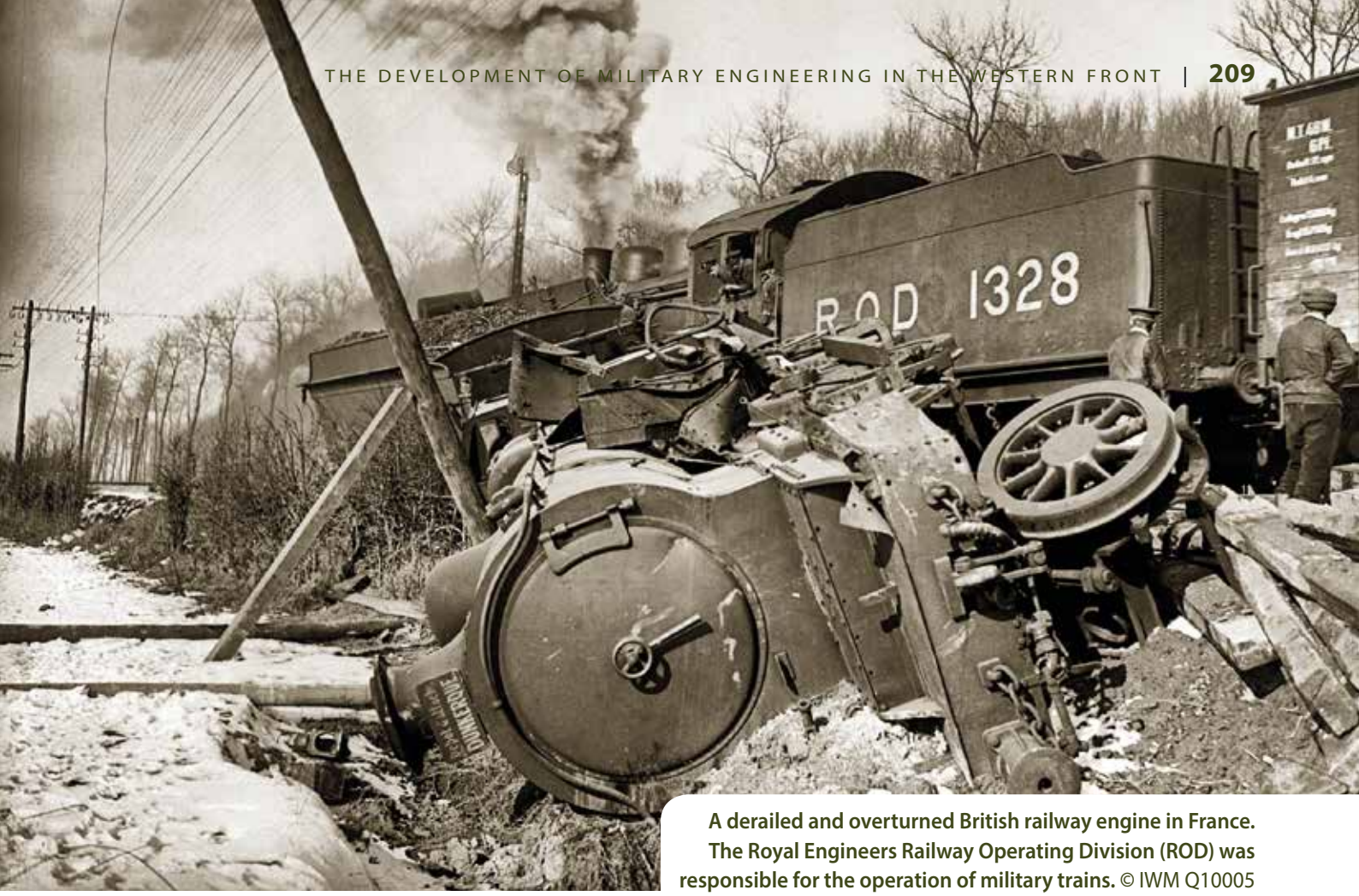

A derailed and overturned British railway engine in France. The Royal Engineers Railway Operating Division (ROD) was responsible for the operation of military trains. © IWM Q10005

The battle of Messines, which opened on 7 June 1917 with the explosion of nineteen mines containing nearly one million pounds of ammonal, had even more impressive results: clearing the Germans from the ridge and securing the southern flank of the Ypres salient. In many ways, Messines represents a better example even than Amiens a year later of the integration of all arms, combat, combat support (including aviation), not least because it includes offensive military engineering. Liddell Hart refers to Messines as 'almost the only true siege-warfare attack made throughout a siege war'.[5]

The Communication Zone

The full extent of the expansion of the BEF and RE between 1914 and 1917 is seen less in the Combat than in the Communications Zone (Comm Z), where the 'live' and 'move' aspects of the engineer role take precedence. In the Combat Zone, expansion is largely quantitative – more (a lot more) of the same. The Comm Z is different. As noted by Field Marshal Haig's chief of intelligence, Brigadier General John Charteris, its activities encompassed all the quasi-civilian activities involved in the support of a large force in the field:

> Food supply, road and rail transport, law and order, engineering, medical work, the Church, education, postal service, even agriculture, and for a population bigger than any single unit of control (except London) in England.[6]

Yet Charteris omits accommodation. The Nissen Hut was a Great War design; the initial buy in the spring of 1917 was 47,000; by the Armistice orders were in six figures.

Before the war, the French undertook to provide full facilities for the BEF's line of communication (LOC). This arrangement provided convenient cover for the Treasury to avoid funding this capability and for the War Office to ignore the requirement. Had an early favourable outcome occurred, these actions would have been justified in that the British would not have had time to deploy major reinforcements and supply more resources to their initial force. In the event, the Nord Railway could not sustain elements of three armies – French, Belgian, and British – while maintaining essential civilian supplies. The expanding BEF included RE railway operating and construction companies but these could not be used effectively due to French refusal to allow them to work on the system. Rail transport reached breaking point during

[5] B.H. Liddell Hart, *History of the First World War* (London: Cassell, 1970), p. 417.

[6] Brig-Gen J. Charteris, *At GHQ* (London: Cassell, 1931), p. 208. The peak strength of BEF was just under two million men and women, and 450,000 horses.

the Somme campaign; the solution was to employ civilian experts and apply business methods. Sir Eric Geddes, formerly General Manager of the North-Eastern Railway, became Director-General of Transportation. Civilians were also appointed to head the docks, roads and inland water transport organizations. Geddes was accustomed to thinking big. His comments are strikingly relevant today:

> Generally speaking, the soldier, as opposed to the civilian, asks for less than he really ought to have and… this is due to the way in which he has been made to cheesepare, and the fear he has of the Treasury, on account of the lean years before the war; throughout, the soldier has put forward demands far below the real needs of the situation.[7]

The new dispensation rapidly improved transportation; the British were allowed to build and operate their own standard gauge rail lines, and narrow gauge rail began to proliferate – belatedly compared with other combatants. Map 33.1 shows the rail support for the Messines attack in June 1917; note the profusion of narrow-gauge lines. To generalize, standard gauge rail was the responsibility of Director-General Military Railways, narrow gauge of Army HQ and below. A similar split applied to roads: Director-General Roads in the Comm Z, Army forward of its rear boundary.

Meanwhile, the use of the French waterways by the Allies was hampered by some critical links crossing the front lines. Nevertheless, this method of transportation proved a valuable supplement to the rail system for bulky commodities (forage, coal) in particular, and also for the casualty evacuation of non-urgent cases.

Force support engineering in the Comm Z included a multiplicity of functions falling into the area of 'you name it, it probably existed'. Much of the effort was extractive – obtaining construction materials in-theatre and so avoid importing them through overloaded ports. Forestry and quarrying companies therefore figure. Provision of utilities – electrical generation, water supply, was required throughout, as were the maintainers and repairers for all the functions mentioned above.

Conclusion

The numbers are enlightening. The (rounded) strength of the Royal Engineers on 1st August 1914, including Territorials, was 25,000 all ranks. At war's end it was 314,000, including 85,000 transportation personnel. The RE emerged from the Great War with their reputation enhanced, and conscious of a job well done. Yet the expansion of the backbone of RE, the field companies, during the War was quantitative rather than qualitative. At the end as at the beginning, the field companies were still, in the words of the Corps History, 'men who marched and men who dug'.

It is one of the surprises of military history that the lean inter-war years were a period of great technical advance for the RE. Mechanization both of movement and of tools and equipment, new wet and dry bridging, earth-moving machinery; the transition to an equipment-based Arm, seen during the First World War in bridging only, was fully established across the Corps in time for the Second.

Michael Crawshaw

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[7] Geddes, letter to Granet (DG Military Railways), in Ian Malcolm Brown, *British Logistics on the Western Front 1914-1919* (Westport CT and London: Praeger, 1998), p. 143.

35. Mapping and Survey on the Western Front

Introduction

The First World War saw a massive, unprecedented mapping and survey effort made in support of the British army, and especially of the British Expeditionary Force (BEF) on the Western Front. Many new and revolutionary survey and mapping methods and techniques were developed, which together greatly enhanced the effectiveness of the BEF. A new era opened with aerial observation, aerial photography and photographic interpretation. Innovations included: the making of maps from air photos; the provision of air charts and of large-scale maps; the use of an alphanumeric reference system, coloured overprints, sound-ranging and flash-spotting; the making of artillery boards, of panoramas, of photo mosaics and of relief models.

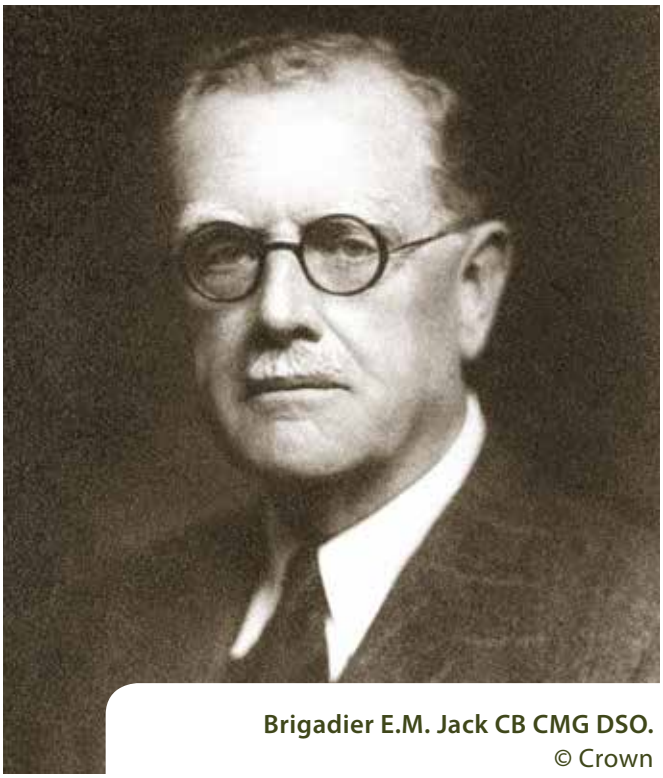
Many of these methods and techniques are still in use today. The British army continues to use an alphanumeric reference system and coloured overprints derived from aerial photography on its maps, and still produces large-scale maps, relief models, air charts, panoramas and photo mosaics.[1]

During the First World War mapping and survey functions were performed by the Geographical Section of the General Staff (GSGS) at the War Office in London, by the survey units of the Royal Engineers (RE) in the field and by the Ordnance Survey (OS) in Southampton.

First Days

At the outbreak of war, it was fortunate that the War Office had at its disposal the GSGS, the RE and the OS, all well-established organisations in map production. Supported by civilian personnel, military staffs were well trained in mapping techniques and very familiar with surveying in a variety of conditions around the world.

On mobilisation, the Printing Company RE accompanied the BEF and was based at General Headquarters (GHQ) at St. Omer in France. It was equipped with cameras, litho-presses, duplicators and a letterpress outfit. On the staff at GHQ was Major (later Brigadier) E. M. Jack RE, known as 'Maps, GHQ'. All RE surveyors and mapmakers in France and Flanders worked under his direction – eventually nearly 4,000 officers and men.



Brigadier E.M. Jack CB CMG DSO.
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It was the first war in which British soldiers were provided in advance with adequate medium scale mapping, thanks to the foresight of GSGS. The BEF was originally provided with two sets of maps of Belgium (GSGS 2364 at 1:100,000) and France (GSGS 2526 at 1:80,000) based on host nation mapping. They were suitable for the mobile operations that were anticipated and in fact occurred in the opening phase of the war, but not for the unforeseen static operations that followed.

Large-Scale Maps

Trench warfare rendered medium scale maps useless and created the urgent need for large-scale maps with a short contour interval, a few feet horizontally or vertically being crucial in such warfare. The OS enlarged the 1:80,000 map (which had hachures, not contours) to 1:40,000 but the inaccuracies of the original (surveyed in the early nineteenth century) meant that it could not be relied upon for either infantry or artillery use.

[1] Much of this effort is now undertaken on a Defence-wide, joint basis. The Defence Geographic Centre (DGC) is the Defence lead organisation.

After a further attempt at revising the 1:80,000 was abandoned in December 1914, a decision was taken to carry out a full-scale survey of that part of the British front in France. The 1st Ranging Section under Captain H. Winterbotham RE was tasked with the job. The section was experimental: it had been deployed in the expectation that it could, from disparate known ground locations, intersect Allied aircraft flying over enemy gun batteries and thus locate those batteries and enable them to be targeted for counter-bombardment. This approach, however, proved unsuccessful. Comprising RE observers and topographers, together with plane-tablers transferred from OS, the section began the painstaking task of re-triangulation in January 1915.

The work of Winterbotham's section resulted in a new series at 1:20,000 (GSGS 2742), which eventually covered the whole of the British front. During the war over 12,000 square miles were surveyed (initially on the ground and later from the air) at the scale of 1:20,000. On this firm basis accurate large-scale maps were produced. The main series were at 1:40,000, 1:20,000 and 1:10,000 scales. Although smaller and larger-scale maps were also produced (including the 1:5,000 scale for use by the infantry for patrols and raids), these three principal scales addressed respectively the main needs of administration, the artillery and the infantry.

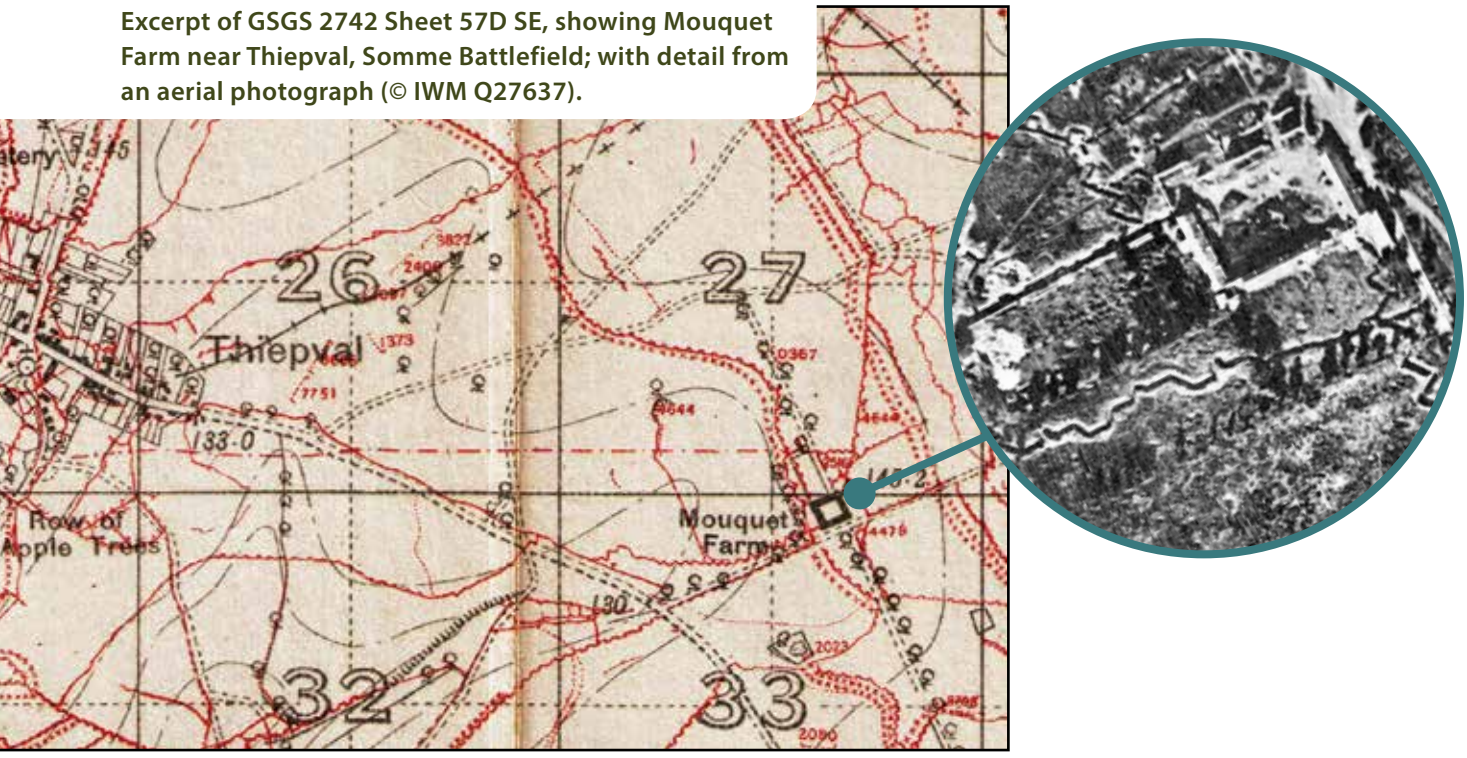
The most commonly used maps were those of the 1:20,000 series. They were often very detailed, for they were designed for use by heavy and medium artillery, which required an accurate means of engaging targets indirectly, beyond or out of line sight.

That part of the BEF operating in Flanders was already in possession of detailed and accurate maps, reproduced from Belgian 1:10,000 scale sheets sent to the OS from Antwerp in 1914. The British adopted the Belgian grid of sheets for their own 1:40,000 and later 1:20,000 and 1:10,000 maps, extending the grid to cover the entire British front including that part in France. The resulting maps reflected the numbered and lettered squaring of the front in a way which enabled the artillery and infantry to pinpoint locations more accurately and easily.

Aerial Photography

Aerial photography, taken by the Royal Flying Corps (RFC) and its successor the RAF, was an invaluable tool both for improving mapping and for locating and confirming locations of enemy artillery made by flash-spotting and sound-ranging. On his own initiative, in January 1915 Lieutenant C. C. Darley RFC took air photos of part of the German frontline, which he interpreted and made into a map. His superiors were impressed, realising that useful intelligence could be derived from the study of air photos and displayed in an understandable way on a map. From then on aerial photography, Photographic Interpretation

Excerpt of GSGS 2742 Sheet 57D SE, showing Mouquet Farm near Thiepval, Somme Battlefield; with detail from an aerial photograph (© IWM Q27637).



(PI) and the depiction of the results on maps became standard practice.

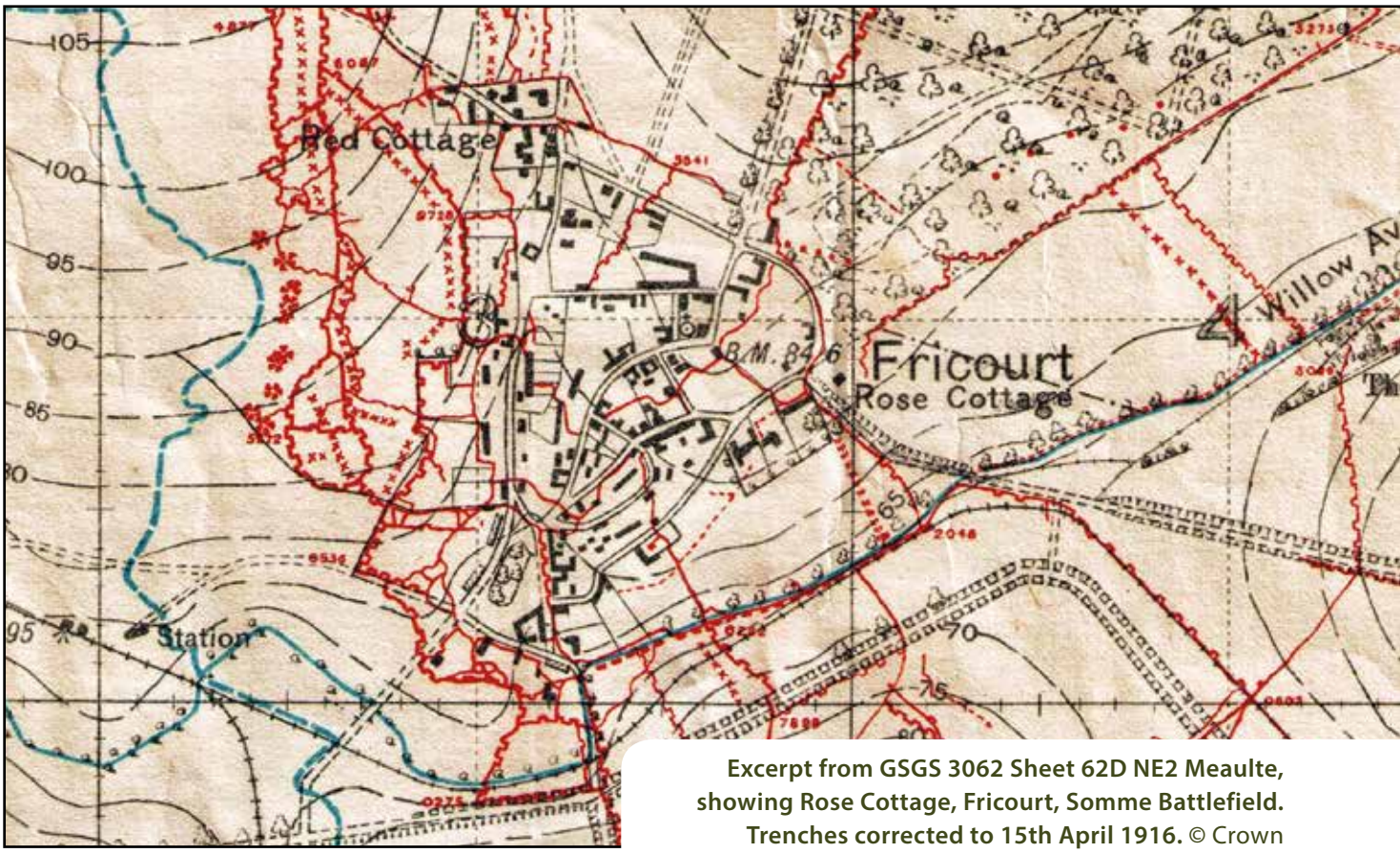
Trench Maps

By July 1915 each of the British armies on the Continent had its own team of expert survey staff responsible for the compilation of larger scale trench maps. The information, usually obtained from aerial photographs and sketches undertaken by staff on the ground, culminated in a large number of 1:5,000 scale sheets. The battle of Neuve Chapelle in March 1915 had shown up a large number of inaccuracies: it became clear that a new series of large-scale maps was necessary if operations were to be mounted more effectively. Maps, GHQ had started to introduce a new series of 1:10,000 trench maps (GSGS 3062) in June to Second Army and, by August, to First Army. These maps were reproduced by the OS in Southampton and then shipped to St. Omer.

batteries, barbed wire, pillboxes, bunkers etc., but also with British field defences and fortifications (though in less detail, in case of capture). German constructions were shown in red and British in blue (though in 1918 these colours were reversed). To maintain their currency, the overprints were updated as soon as new air photos or other intelligence came in; so 'S' maps passed through several editions. Their circulation was naturally limited.

Topographical Sections and Field Survey Companies

During July to September 1915, Maps and Printing Sections evolved into the more independent Topographical Sections, which were now making extensive use of new advances in technology. On the Somme, Third Army's Topographical Section under Winterbotham used air photos, plane-table surveys and a set of nineteenth century cadastral plans, obtained



Excerpt from GSGS 3062 Sheet 62D NE2 Meaulte, showing Rose Cottage, Fricourt, Somme Battlefield. Trenches corrected to 15th April 1916. © Crown

Series GSGS 3062 is most famously the 'trench map', being the most commonly used by the infantry. Each sheet measured 80 x 50 cm and covered an area of 8 x 5 km on the ground. The Western Front was divided into alphanumeric squares.[2] 'Secret' ('S') editions of trench maps were overprinted not only with German trenches, from the Land Office at Amiens, to produce new 1:10,000 and 1:20,000 scale maps. So accurate and fine was the detail of the 1:10,000 scale maps that the 1:20,000 scale maps were produced by photographic reduction of the 1:10,000. Better photographic equipment, both aerial and ground based, together with improved printing presses

[2] The village of Fricourt on the Somme Battlefield appears on sheet 62D NE2 Meaulte, which is the second sheet of four in the North East quadrant of square 62D. Rose Cottage in Fricourt is shown on this sheet at reference F3d 89, which is 8/10ths North and 9/10ths East of the South West corner of square F3d. Captain C. Romer RE invented cards (still known today as 'romers') to determine such precise references within squares.

and developments in flash-spotting and sound-ranging, ensured that throughout the BEF from autumn 1915 an excellent 1:10,000 scale map and an equally excellent 1:20,000 scale map produced from it were standard issue for the infantry and artillery respectively for the rest of the war.

The Topographical Sections evolved into Field Survey Companies in February 1916 and each army in the BEF was assigned one company. The maps for the Somme offensive (July to November 1916) were produced by the new Fourth Army's Field Survey Company under Major M. N. MacLeod RE.

Field Survey Company controlled the work of Sound-Ranging Sections.

In parallel, Lieutenant H. H. Hemming RA developed flash-spotting, a visual method of synchronised observation of gun flashes from known, surveyed, observation posts. These sections were also controlled by the Survey Companies. In 1915 artillery boards were designed to make map use more convenient for the RA and to avoid inaccuracies resulting from an un-mounted map. The earliest boards were simple, carrying only a grid, the gun positions and other conspicuous points. An improved version, made from the 1:20,000 scale map, was designed

Major-General M.N. MacLeod CB DSO MC. © Crown

Flash-Spotter at work in his shelter.

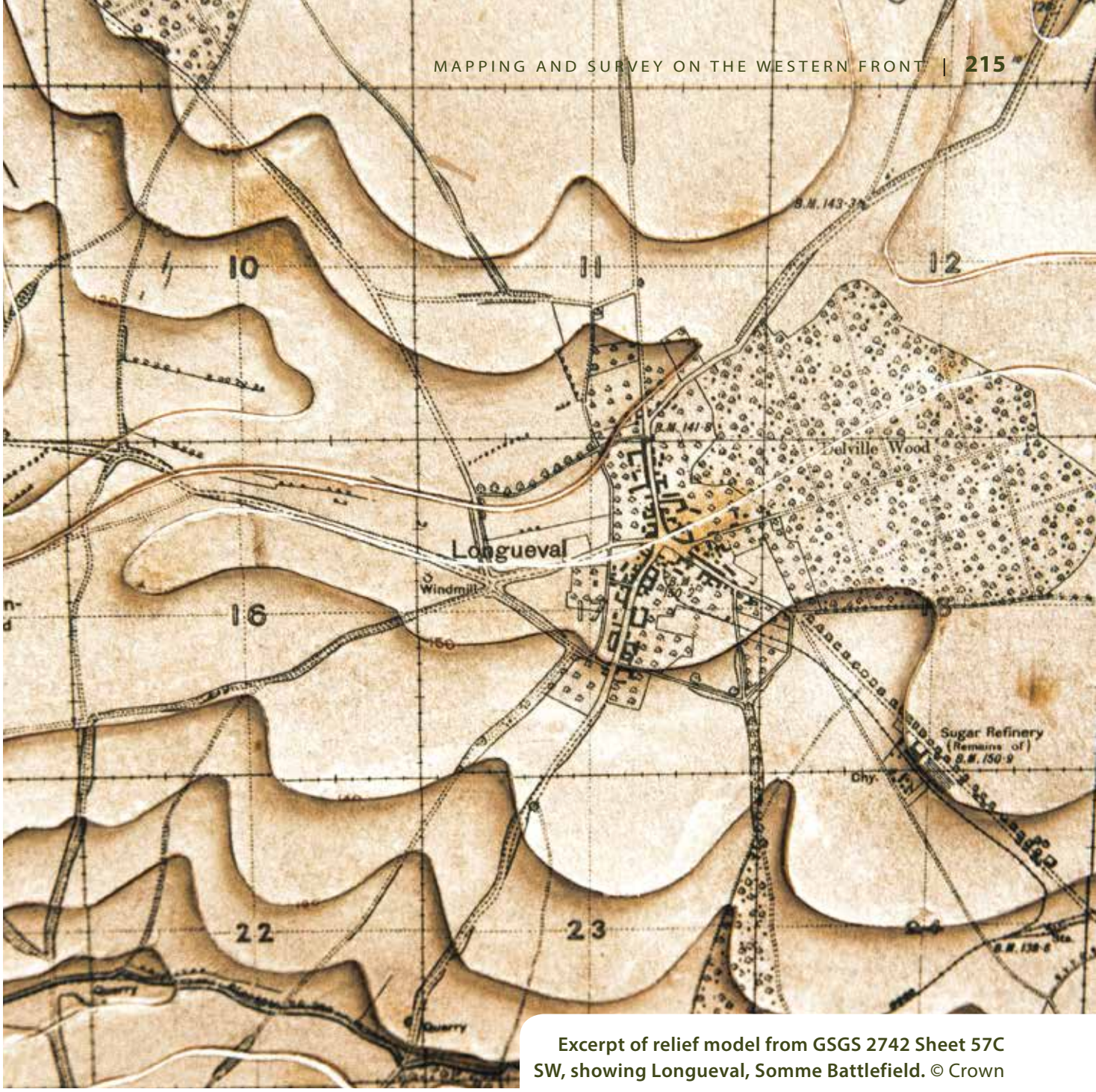
Artillery Support

Sound-ranging and flash-spotting techniques were developed to locate the positions of enemy artillery so that the Royal Artillery (RA) in counter-battery fire could target them. Sound-ranging was an electro-mechanical means of recording the sound waves set up by the discharge of a gun and so computing its position. Flash-spotting aimed at the same result by taking cross bearings of a gun flash. At the beginning of the war, the RA investigated sound-ranging, which had been invented by Mr Lucien Bull, an Englishman working in Paris, and which had been under development by the French army. While the RA had discounted the method as unworkable, Jack – on his own initiative – embraced the idea and appointed the young and brilliant Nobel Prize winner for Physics, Lieutenant W. L. Bragg RA, to develop it.[3] Bragg pioneered the introduction of very successful field equipment. Each in 1916. The complementary methods of flash-spotting and sound-ranging enabled the location of enemy artillery batteries, their depiction on maps and their engagement by counter-battery artillery, to devastating effect at the battles of Cambrai in November 1917 and Amiens in August 1918.

Relief Models

Using the GSGS 2742 1:20,000 scale maps, relief models were made of the entire British front. They were required for planning purposes because for most of the front the Germans had the advantage of holding the high ground and occupying the reverse slope. These models consisted of layers of sheets, cut to the shape of a contour. The result was a model which represented the ground in a series of steps, the proportion of the vertical to the horizontal scale being 4.5 to 1 (or for exceptionally flat areas, 9 to 1). Not being moulded but cut, the sheets were raised not

[3] In 1915, at the age of 25, William Lawrence Bragg, was joint winner (with his father, William Henry Bragg) of the Nobel Prize in Physics for his work on the analysis of crystal structures by means of X-rays. For his service in the First World War, Lawrence Bragg was awarded the Military Cross, appointed an Officer of the Order of the British Empire and was Mentioned in Despatches on three occasions.



Excerpt of relief model from GSGS 2742 Sheet 57C SW, showing Longueval, Somme Battlefield. © Crown

bent and remained planimetrically correct. The models were distributed down to brigade level. Field Marshal Sir Douglas Haig (C-in-C BEF) and his staff used the GHQ master set, as crayon marks and diary entries testify. By exaggerating the vertical axis, these relief models enhanced appreciation of ground, both its dangers and its possibilities.

Printing

The Map and Printing Sections used lithographic hand presses which printed sheets up to 17.5 x 22.5 inches in size. In 1917 the Field Survey Companies were equipped with larger presses: 30 x 20 inches in Third Army (privately acquired for the Arras offensive) and 25 x 20 inches in the other Armies. Third Army later acquired a press for producing maps up to 22.5 x 35 inches and by early 1918 all the other Field Survey Companies were so equipped. All these presses were of the flat-bed type. From late 1916 Field Survey Companies were being trained in photo-mechanical reproduction processes and being equipped with copying cameras and process equipment.

Expanding Production

Despite an increase in personnel and better reproduction processes, the ever-growing scale of the war meant that demand for maps constantly outstripped supply. At the end of 1917 OS established an Overseas Branch, Ordnance Survey (OBOS) near Wimereux to support the BEF directly and especially to make up the shortfall of maps. By the spring of 1918 OBOS was in full production. However,

the German breakthrough on the Somme in March 1918 meant that maps of areas well in the rear of the former frontline had to be produced urgently and despite the loss of equipment. Such areas had not been surveyed in detail. In consequence, Field Survey companies were enlarged into battalions in June 1918. Together with OBOS, these units were able to carry out the entire process of map production in theatre. The large number of sheets being produced at 1:20,000 scale by OBOS was sufficient to allow the survey battalions to concentrate on 1:10,000 scale sheets. Production of maps at these two scales now met demand.[4]

Last Days

With the battle of Amiens in August 1918, the BEF broke through the German lines and brought the return of mobile warfare, which made trench maps redundant. In the following 100 days of unrelenting offensive action by the Allies, the Germans were driven back into Belgium and forced to surrender. After the war, the mapping and survey effort on the Western Front received a glowing tribute from Haig:

> The great development of air photography, sound-ranging, flash spotting, air-burst ranging and aerial observation brought counter battery work and harassing fire both by day and night to a high state of perfection. Special progress was made in the art of engaging moving targets with fire controlled by observation from aeroplanes and balloons. The work of the Field Survey Sections, in the location of hostile battery positions by re-section and the employment of accurate maps, was brought into extended use. In combination with the work of the Calibration Sections in the accurate calibration of guns, and by careful calculation of corrections of range required to compensate for weather conditions, it became possible to a large extent to dispense with registration, whereby the chance of effecting surprise was greatly increased. In the operations east of Amiens on the 8th August, 1918, in which over 2,000 guns were employed, practically the whole of the batteries concentrated for the purpose of the attack opened fire for the first time on the actual morning of the assault.[5]

Conclusion

The effort over the four years of war was the largest survey and mapping operation carried out by the army up to that time. During the war the GSGS, RE and OS were all greatly expanded to meet the huge needs of the army. This expansion was a common feature in all the armies in every theatre of the war, though in only the British army on the Western Front did the investment produce such a good return. Working together, the RE, civil surveyors, colonial surveyors and civilian specialists revolutionised mapping and survey. Innovations such as flash-spotting, sound-ranging, aerial photography, squared and overprinted mapping all combined to produce much greater precision in location and fire on the battlefield than hitherto, an effect that amounted to a revolution in military affairs and contributed greatly to the Allied victory. The enormous efforts and revolutionary advances made during the First World War should not be forgotten. The legacy is important: the foundations of the survey and mapping work that the British army – and more widely, Defence – carries out today were laid during the First World War.

John Peaty

Acknowledgement

The assistance of Colonels Michael Nolan and Christopher Nash, and Mrs Barbara Taylor is gratefully acknowledged.

Further Reading

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[4] Under its Director General, Colonel (later Sir) Charles Close, Late RE, the OS was fully mobilised in support of the British army's mapping and survey effort during the war. A total of 34 million maps was produced for the Western Front, of which OS produced 21.7 million and OBOS 3.1 million, while the War Office produced 2.1 million and RE survey units in theatre 7 million. Of these 34 million, 31 million were issued.

[5] Haig's Final Despatch, *The London Gazette,* 10 April 1919, p. 4701.

36. Logistic and Medical Support on the Western Front

Introduction

The First World War is often viewed through the lens of combat, with the evolution of operations on the Western Front reflecting the competitive development of new tactics and equipment between the Entente and the Central Powers. But this perspective misses the essential truth that whatever battlefield advantages were achieved, they were only transient unless they could be sustained. Fundamentally, it was the relative success of the British Expeditionary Force (BEF) in sustaining military operations that enabled it to translate tactical success into the operational and strategic levels.

This achievement was due to the efforts of the Royal Engineers (RE), Army Service Corps (ASC), Army Ordnance Corps (AOC) and the Army Medical Services (AMS)[1]. Military engineers, logisticians and medics deployed with operational concepts that were developed from previous conflict experience – that in South Africa in particular – and adapted them to meet the new challenges that faced them in a new war. In so doing, they exploited best practice from the Empire's civilian technical, industrial and clinical base and grew it into an integrated whole from factory floor to fire trench. Due to constraints of space, this chapter gives only a brief overview of the sustainment effort on the Western Front. The crucial role of the railways is covered in the chapter on Military Engineering, noting that the logistic and medical services were much dependent on this means of transport.

Supply and Transport

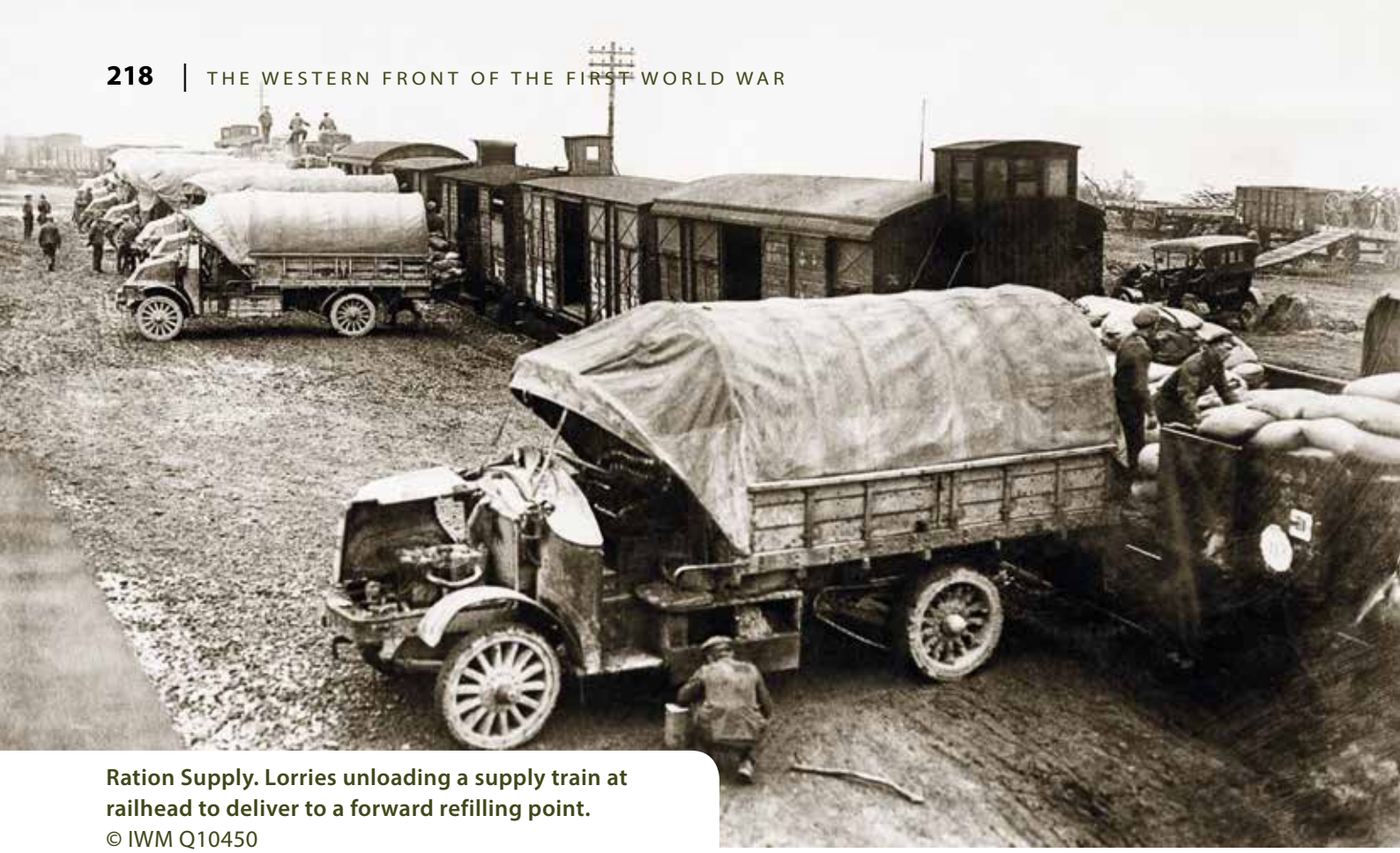
The logistic system employed by the BEF in 1914 saw the establishment of base depots at seaports with supplementary establishments located along the Lines of Communication. These fed into an advanced base of ordnance parks, hospitals and like installations to support the Field Army. The BEF deployed to France through the Channel ports of Le Havre, Rouen and Boulogne with its advance base being established around Amiens. This framework of support was maintained throughout the war except for a brief interlude in 1914 when the German advance towards the river Marne required the use of ports in western France. The original scheme of logistic support was resurrected by the end of that year and was further developed in 1915 as the BEF grew in size and became concentrated between the Somme and Ypres. Problems with port capacity and access saw the addition of Calais as a major seaport, together with the smaller ports of Dieppe, Le Treport and St Valery.

The subsequent supply effort was biblical in scale, bringing together the outputs of the United Kingdom's mobilized industrial base with commodities from all corners of the globe. The creation of the Ministry of Munitions in 1915 saw an exponential increase in production: sites such as Barnbow near Leeds developed from green fields to an industrial facility that employed 16,000 people and had filled 25 million shell cases by November 1918.[2] Given the rapacious demands of the fighting, the munitions requirement could not be fulfilled by British factories alone. Consequently, around 30% of the 190 million shells delivered to the Western Front came from Canada in addition to smaller quantities from the USA. Fuels, fodder and foodstuffs were other key commodities of supply. Petrol was initially shipped via the UK; by 1916, however, it was being delivered directly from the USA to Calais and Rouen, with 13 million gallons being consumed per month by 1918. Likewise, the BEF's draught animals required 32 million pounds of forage per month. This requirement was primarily sourced from within France, supplemented by imports from America, Spain, Portugal, Italy and Algeria. Food for the troops was initially shipped in bulk via the United Kingdom[3] but later was delivered directly from the country of origin, often using refrigerated ships. From October 1915, three quarters of a pound of fresh or preserved meat was provided daily for each man with one pound of bread from field butcheries and bakeries at the main bases. This basic ration was supplemented with sundries of bacon, cheese, vegetables, tea, jam, sugar, salt and condensed milk.

[1] The use of the term AMS was not used in the First World War. Its main constituent Corps, the Royal Army Medical Corps (RAMC) and the Queen Alexandra's Imperial Military Nursing Service (QAIMNS) were integrated throughout its units from CCS rearwards. For ease the term AMS will be retained, but the reader must be aware that its use is somewhat anachronistic.

[2] His Majesty's Factory, Gretna, on the Solway Firth was the United Kingdom's largest cordite factory during the First World War; it employed over 16,000 people – two thirds of whom were women.

[3] A huge military port was developed at Richborough, Kent, through which many supplies flowed to France.

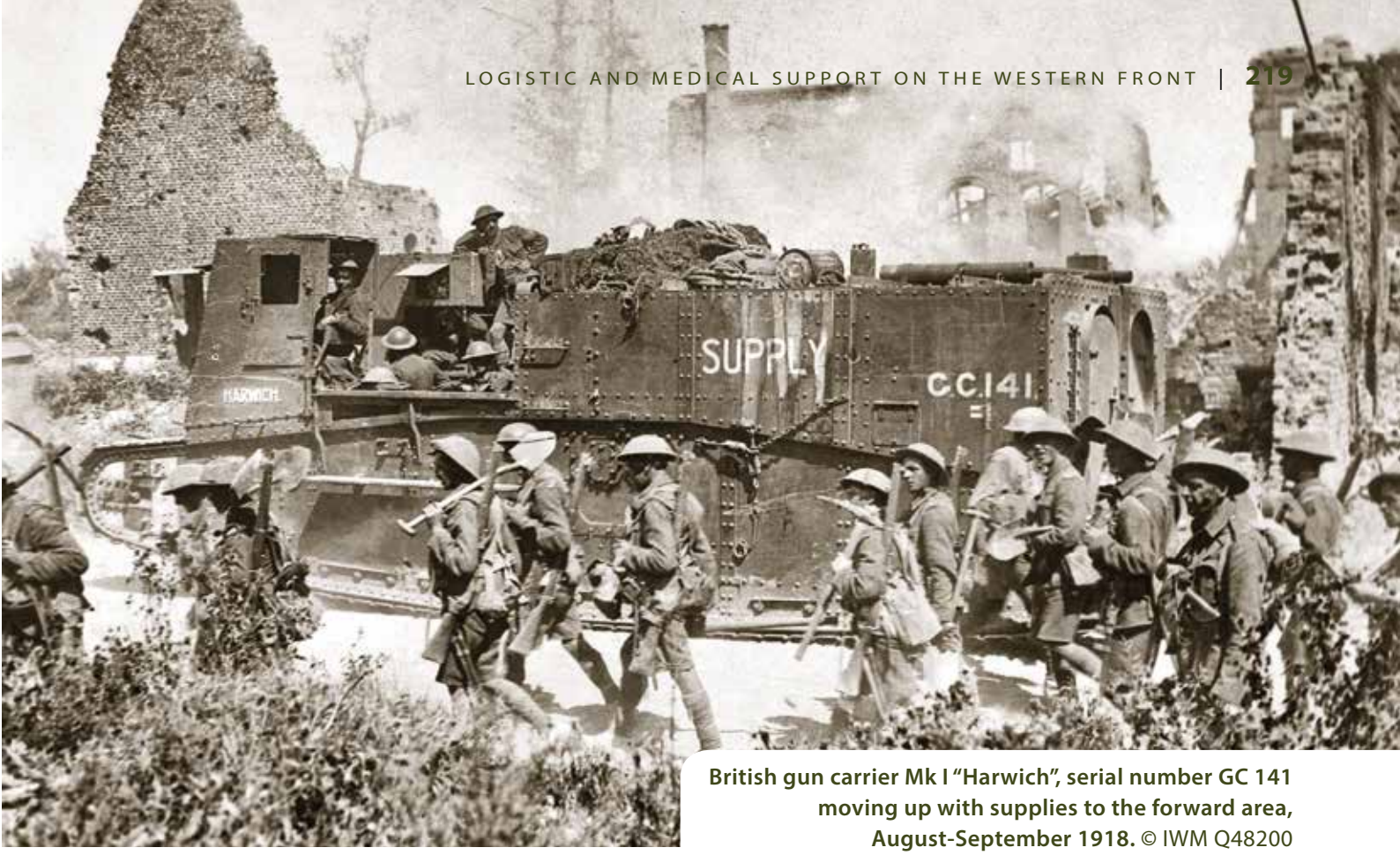


Ration Supply. Lorries unloading a supply train at railhead to deliver to a forward refilling point.
© IWM Q10450

All of these supplies were delivered by the system marshalled by the ASC on routes managed by the RE In 1915 the BEF adopted the French system of 'Regulating Stations' for each field army on the strategic rail lines at Calais, Boulogne, Abbeville and Romescamps. These stations received the daily 'section pack grocery trains'[4] and added to them wagons from other depots containing all remaining classes of supply. Having completed the 'section pack train', it was dispatched to the designated railhead for the receiving division. This 'push' system was gradually modified following the reorganization of the Communication Zone in 1916 and the appointment of civilian experts such as Sir Eric Geddes to direct support activities. Refinement of procedures allowed an element of 'pull' to be inserted into the system so that divisional pack contents could be adjusted to meet specific requirements. At the divisional railhead the contents of the pack were transferred to the motor transport of the Divisional Supply Column, which in turn delivered heavier ammunition natures and engineer stores to centralized dumps, and other commodities and light ammunition to a 'refilling point'. Horse drawn transport then brought supplies forward to brigade areas for collection by units. The final leg saw supplies delivered to convenient points at the rear of the communication trenches for collection by unit ration parties.

Although this system stayed broadly unchanged throughout the war, the equipment employed saw the similar rapid developments as experienced by the combat arms. In 1914, the BEF held only 80 motor vehicles on charge. A Subsidy Scheme, whereby privately or commercially owned vehicles were part financed by the War Office with the proviso that they could be requisitioned, provided the majority of motor transport requirements. Key vehicles were the 3 cwt and 3 ton trucks provided by firms such as Wolseley and Thorneycroft. This system provided the BEF with 1200 lorries in 1914, a figure that grew – through military procurement – to 18,500 by November 1916 and to 24,800 by January 1918. Although the number of trucks increased, their mobility over rough terrain remained extremely limited. Pack animals were used, but a major shift was seen in 1918, when obsolete platforms such as Mk IV tanks and armoured gun carriers – both of which had caterpillar tracks – were used to supply troops on the battlefield with loads of up to 10 tons. At Amiens on 8 August 1918 these vehicles were supplemented by resupply from the air whereby small arms ammunition was delivered to forward troops by parachute. Narrow gauge 60 cm light railways were used to link ammunition dumps with battery positions to deal with high volume heavy loads, but these lost utility in the mobile battles of late 1918. Likewise, barges were used to utilise the inland waterways in France to reduce the load on the railways for bulk commodities.

[4] One day's groceries for one division.



British gun carrier Mk I "Harwich", serial number GC 141 moving up with supplies to the forward area, August-September 1918. © IWM Q48200

An unsung function relates to the movement of troops. In 1914, buses from the London General Omnibus Company were deployed, each capable of carrying 25 soldiers. These were eventually grouped into an Omnibus Park of 324 buses and 271 lorries – the latter each seating 20 men – capable of transporting the infantry of a division in a single lift. This critical capability played vital roles in the rapid redeployment of troops during the crisis of March 1918 and in the covert concentration of forces prior to the Battle of Amiens in August of that year.

Evacuation and Treatment

The evacuation of sick and wounded presented the AMS with similar – but almost opposite – set of problems to resolve. Whereas the ASC had to receive bulk supplies from strategic bases and deliver them to dispersed tactical users, the AMS had to collect the individuals from isolated points of injury and recover them to the concentrated treatment centres in the base area. In 1914 the system consisted of Regimental Aid Posts (RAPs), Field Ambulances (Fd Ambs), Casualty Clearing Stations (CCSs) and either Stationary or General Hospitals.

The RAPs consisted of a unit medical officer (MO) and five RAMC soldiers supported by sixteen regimental stretcher-bearers. The RAP would normally be deployed around 2-300 metres from the front line and was the point to which the bearers brought the wounded from the point of injury for the attention of the MO and his team. Later in the war the establishment of bearers was increased to 32, but given the large number of casualties, difficult ground and proximity of the enemy, they were frequently overwhelmed by their task.

Casualties were collected from the RAPs by the Fd Ambs. These units were organized into Bearer and Tent Divisions on a functional basis, with each split into 3 sections (A, B and C) and grouped with its equivalent section in the other division. In operation, the Bearer Division collected casualties from the RAPs and delivered them to the Advanced Dressing Station (ADS), and thence via ambulance transport to the Main Dressing Stations (MDS) established by the Tent Division. The section structure enabled the deployment of elements for detached duty as required. In 1914, BEF casualties were evacuated from the MDS by empty supply lorries as they returned to the railheads. This scheme proved ineffectual during the Battle of the Aisne: in September 1914, 50 motor ambulances were regrouped into a Motor Ambulance Convoy (MAC) to clear the MDSs. By 1918 25 such units were in existence. The MACs transported casualties to the Casualty Clearing Stations (CCS).

The CCSs represented the pivotal units in the AMS as they developed to fully combine clinical and evacuation functions and saw the greatest adaptation as they

Battle of the Scarpe. Scene at an advanced dressing station at Tilloy-les-Mofflaines with a column of horse-drawn ambulance wagons Mk VI waiting to remove casualties, April 1917. © IWM Q2010

increased in size and undertook more complex surgical procedures. Initially termed Clearing Hospitals and configured to collect and evacuate casualties, they increasingly drew clinical capabilities forwards from the General and Stationary Hospitals in order to improve timeliness of care. By 1917 they were equipped to hold 200 seriously injured and 800 less serious cases awaiting evacuation, and surgical teams to operate as required. Following the battle of Loos in September 1915, CCSs were deployed in groups of two or more of which only one received casualties at any time. When full, it 'closed' to treat and evacuate while another of its grouped CSSs took on the reception task. Where possible, these CCS groups were placed next to railheads to enable speedy evacuation by ambulance trains to base hospitals; to ease congestion, flotillas of hospital barges on the inland waterways were also used, specifically for casualties with severe vascular injury where jolting was best avoided.

Hospital care was provided by 200 bed Stationary Hospitals designed for the Lines of Communication and 520 bed General Hospitals designed for comprehensive care in a formal base location. Due to the compressed geography of the Western Front and relatively static character of the fighting, this differentiation became somewhat academic: both types were grouped together at Boulogne, Rouen and St Omer, with further General Hospitals at Etaples, Calais, Le Havre and Le Treport. The BEF deployed with 10,000 hospital beds in 1914 and by 1918 had 95,000 beds available in France. Those casualties who could not be returned to duty from the hospitals in France were evacuated to the UK by a fleet of hospital ships, via Netley on the Solent and Dover. From here they proceeded through the Central Hospitals staffed by Regular and Territorial Force staff, to Auxiliary Hospitals staffed by voluntary organizations, providing by the war's end, 364,000 beds.

Technical advances in clinical care mirrored structural developments. As the impact of shock to casualties and the importance of timely treatment became better understood, measures were put in place to improve care. Blood transfusion, oxygen therapy, warmth and emergency surgery were made available at the MDS; more complex surgery was moved forward from the hospitals to the CCSs. Some of these became specialized in nature for specific cases such as thoracic, abdominal or head injuries and were staffed by world leading surgeons in their respective fields. This system was supported by improvements in anaesthesia using ether. Wound infection was fought by debridement, antiseptic irrigation and the development of anti-tetanus serum.

Alongside the fight against injury were the measures to combat illness. Sixty-six Sanitation Companies were established and eventually given responsibility for fixed areas in which they could advise commanders. Louse-borne 'trench fever' was endemic affecting around 15% of all troops each year. It was reduced through the provision of bathhouses and disinfection of clothing using steam or chemicals. Typhoid was countered with an inoculation programme, which although controversial, almost eliminated the disease from the trenches by 1918. The fight against other infections saw the development of pathology in the RAMC, drawn initially from civilian institutions but retained after the war. Its new laboratories rapidly identified infectious cases such as typhoid and dysentery, allowing them to be isolated and outbreaks to be controlled. This contrasts with the Second Boer War, where of a total of 20,721 deaths of British troops, 13,139 were attributable to disease (mostly intestinal) or non-battle injury.

The war also generated injuries not previously seen by military medicine and others not previously recognized in earlier conflicts. Oxygen therapy was developed to treat gas casualties and C.S. Myers developed protocols for psychiatric care based on the expectation of recovery. For those physically mutilated by burns or fragmentation wounds, Harold Gillies developed reconstructive surgery at his clinic at Sidcup.

Consequences

The sustainment capability that these developments enabled was fundamental to the BEF's final success in 1918. A comprehensive typhoid inoculation programme reduced the incidence from 3.1 cases per 1000 troops in 1915 to 0.2 per 1000 in 1918. In a force of almost 1.9 million in March 1918, this represented 5,700 men fit for duty who would have been hospitalized under the conditions of 1915. Although a relatively small number, given this represents the impact of one clinical condition, it is not unrealistic to suggest that the BEF may have had around a division's worth of men in the line against the German Spring offensives that would have been absent earlier in the war. On such slender margins was defeat avoided and victory achieved. Likewise, the prodigious logistic effort in the spring and early summer ensured that the number of guns and howitzers deployed by the BEF increased month on month from 6,073 in March to 6,739 in July despite the losses incurred in combat during this period. Similarly, the manpower strength rose from 1,886,000 to 1,891,000 over the same time. This modest growth resulted from the strategic redeployment of troops to the Western Front from the UK and other theatres, which more than made up for the battlefield losses during the German spring offensives.

At the operational and tactical levels the BEF proved adept at shifting its formations rapidly across its front to counter threats such as that to Amiens in March 1918, and to exploit opportunities at the same location in August. Perhaps the greatest achievement, however, was the operational harmony that developed between the support services and the combat arms in this final period of the war.[5] The emergence of 'lateral exploitation' doctrine was the key to conducting sustainable offensive campaigns, enabling the rehabilitation of armies and the extension of the Lines of Communication ready for the next engagement. The German army never matched this level of logistic sophistication; without it, the Entente could not have prevailed.

Alistair McCluskey

Battle of Pilckem Ridge. Stretcher bearers struggle in mud up to their knees to carry a wounded man to safety near Boesinghe, 1 August 1917. © IWM Q5935

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[5] It is worth noting that at the start of the war the 'A' (equivalent of today's G1) and 'Q' (G4) staff officers messed separately from the 'G' (G2/G3/G5) general staff officers.

37. A Brief Overview of British Communications on the Western Front

Introduction

Anyone wishing to have an understanding of the British army's conduct of operations on the battlefields of the Western Front must also have a good appreciation of the extremely fragile and limited methods of communication that were available to it for the majority of the war. In today's world where instant mobile communications are taken so much for granted that situation can be particularly hard for us to conceive. Equally important is the need to understand the fact that, with the exception of wireless (which was not routinely used), all communications of this era required each party to the communication to know the physical location of the other; something which is increasingly alien to us with text, email and mobile phones all so freely accessible.

With the benefit of hindsight it is very easy to be critical of the communications schemes the British army evolved during the war but, when balanced against the operational context, it actually achieved a great deal in daunting circumstances. All of the combatants on the Western Front faced three similar basic problems in the field of communications. First, they had to supply their armies in the field with adequate communications resources to enable them to conduct operations and avoid defeat. Secondly, they had to expand this provision in line with the wider increase (in the British army's case, a tenfold increase) in the size of their armies. Thirdly, they also had to meet the increased signals demands of modern warfare and weaponry. The British army broadly succeeded with the first two but never really managed to put in place fully effective signals solutions that glued together the employment of long-range artillery, tanks and airpower (despite the fact that the number of signallers increased fifteen-fold); but then neither the Germans nor the French achieved this goal.

Consider this fact: even in late 1917 a British infantry battalion on the attack would advance with cable (only what they could carry), visual signalling equipment and carrier pigeons. The pigeons constituted its most reliable method of communication. Translate that to Iraq and Afghanistan and think how operations would have altered if the only effective way of a battalion communicating with brigade was by pigeon; and you only had two of them, and they only fly in daylight, and they only fly one-way!

Telegraph, Telephone and Despatch Riders

In 1914 the 2,400 members of the Royal Engineer Signal Service in the BEF provided the force with its two main methods of battlefield communications: telegraph and despatch rider. Both were used to deliver the written orders generated by a well-practised staff system. The Signal Service establishment and methods were aligned with the overall expeditionary force concept in that it was intended to deploy a small force to participate in a short war in Europe. Broadly speaking up until the end of 1914, and whilst the scale and time elements of that concept held true, BEF communications worked well. However as the war dragged on and the British Army continued to grow the effectiveness of the original signals provision (both in scale and in method) deteriorated.

Telegraph required sufficient supplies of cable and well trained telegraphers to operate effectively. During the first weeks of the war a great deal of the available cable was lost during the retreat from Mons in August 1914. It was very much a finite resource that took time to replace, particularly as the need for large quantities had not been foreseen. There was a lag whilst the industrial base expanded to meet the unexpected demand caused by these losses and the increasing size of the Army. Throughout the war the supply of cable barely kept up with demand for it and when the fronts broke in 1918 stockpiles of cable were rapidly exhausted. Efficient functioning of telegraph also depended upon expert telegraphers; they took a long time to train. Casualties and increased demand at the front created a shortage, which was compounded by the need for pre-war regulars to staff the expanding signals training establishment in the rear.

[1] All Footnotes

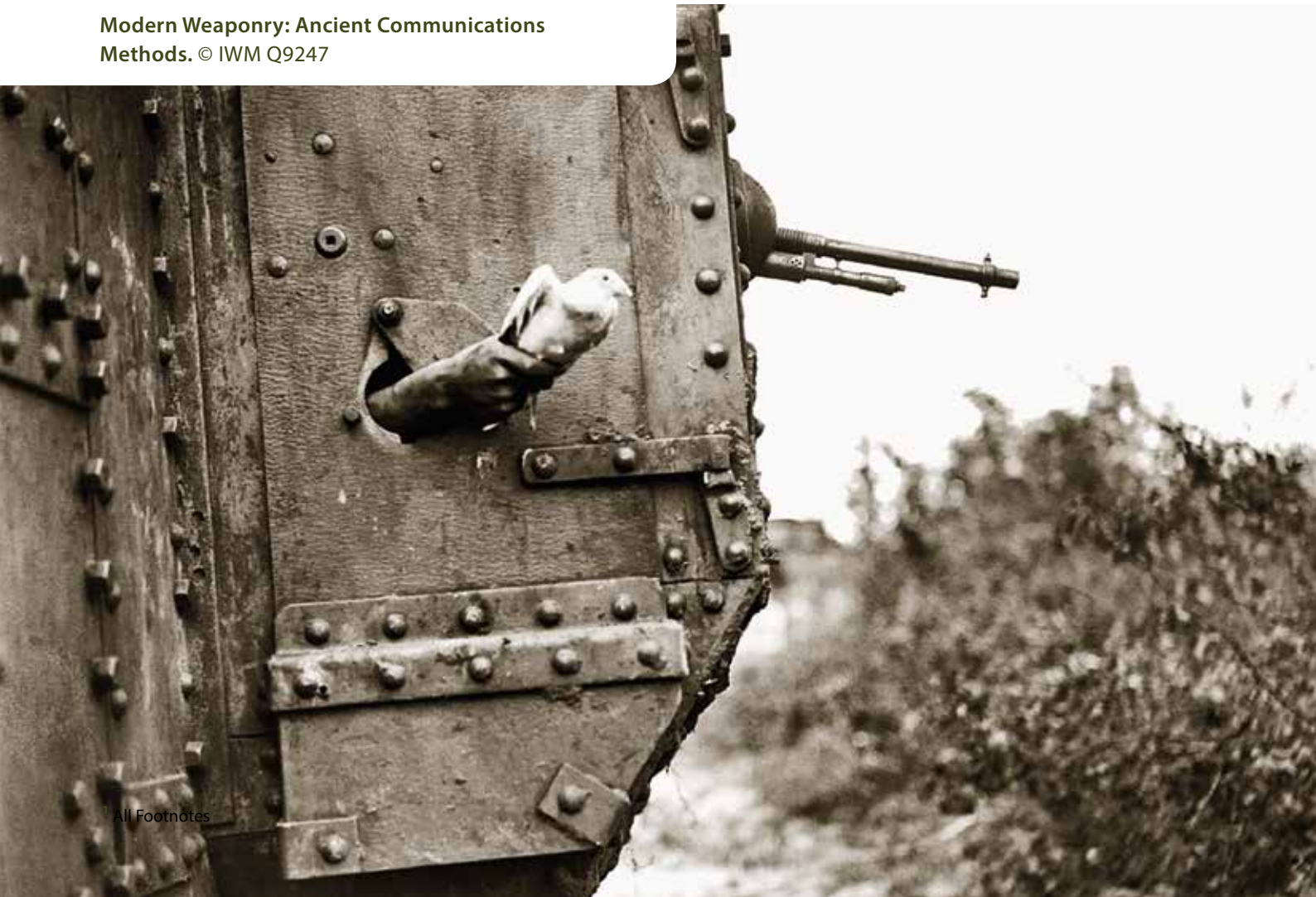
Despatch riders were particularly vulnerable to attrition in battle: during the mobile phase of the war their numbers shrank rapidly, as did the number of serviceable motorcycles. In the BEF of 1914 despatch riders were almost all officer cadets from the University OTCs who provided their own motorcycles and the employment of cadets in this role had been found to work well on the annual summer exercises. 'Bring your own bike' was very much a short-term, one-off (and of course cheap) way of generating a capability, but one which left no quick way of replacing the heavy losses to riders and machines suffered in 1914.

Once trench warfare set in the problems facing the Signal Service mutated and centred on the difficulty in maintaining reliable communications from the edge of what was known as the barrage zone up to and beyond British front lines. They never really managed to do this for a variety of reasons, not least of them being that the extent of the barrage zone and the intensity of fire into it increased as the war went on. Consequently the Signal Service had to constantly evolve its solutions to keep up. For example, cable was easily broken by artillery fire so in response they buried it (a laborious undertaking); then they had to armour it (an expensive undertaking); and, in 1917, they had to bury the armoured cable even deeper.

Telephone was enthusiastically adopted but its cables were vulnerable to artillery fire. In the summer of 1915 it became apparent that it was easy for the enemy to listen to British telephone communications. Once identified, this front-wide security compromise took another six months to remedy.

In the absence of one single method of communication which would reliably and securely bridge the barrage zone, the Signal Service concept was to provide as many varied communications schemes as possible on the basis that at least one should work. Given the context, this was an understandable approach but it did mean that the training burden on the Signal Service increased as the range of skills and equipment required to deliver the variety of methods ranged from cutting edge wireless technology through to carrier pigeons; a communications method used by the ancient Romans. The impact of these factors manifested themselves in the size of the divisional signals companies. Between 1914 and 1918 a divisional signals company grew in strength from 175 to 418 men; in addition, the number of trades employed within the unit grew from 17 to 40.

Modern Weaponry: Ancient Communications Methods. © IWM Q9247



All Footnotes

Despatch Riding on the Somme. © IWM Q4336

Wireless Communications

The destruction of Fifth Army's communications during the opening stages of the final German offensive (Operation MICHAEL[1]) in March 1918 illustrated how fragile communications capabilities still were. The initial German bombardment was very intense: not only did it disrupt or destroy much of the forward cable systems, but also long range artillery did significant damage to rear area systems. The attack was conducted under a veil of thick fog which put visual signals out of action and prevented pigeons from flying. The enemy barrage destroyed much of the limited wireless and power buzzer (a system whereby messages were buzzed through the ground) equipment. Consequently, there was an almost universal interruption of communications between brigades and divisions and little ability to call for, and direct, artillery fire. The lack of communications and associated deficiency in supporting fires considerably hastened the collapse of Fifth Army.

The history of the military wireless makes a fascinating case study in the cultural impediments to introducing new technologies. Wireless had been available to the British Army prior to the war but was generally, and with some good reason, regarded as unreliable and insecure up until this point. However, left with no other effective means, brigades and divisions began to make extensive use of it during the retreat from Mons. It worked particularly well when messages were sent in clear and this was permissible when the exigencies of the situation exceeded the perceived security risks of enemy interception. Wireless was less effective once the situation stabilised, and when Staff policy – for understandable reasons for maintaining security – insisted on messages being enciphered. It would not be until the middle of the Second World War that the British Army successfully integrated wireless on the battlefield all levels from platoon to army group, incorporating lighter and more effective equipment.

[1] All Footnotes

Conclusion

It is easy to criticise the performance of British commanders on the Western Front; sometimes this can be done with good reason, but it is important that any assessment of their conduct of operations is balanced against a good understanding of the enormous challenges they faced. Ultimately, the huge British forces involved on the Western Front (and similarly in other theatres of war) had to have sufficient, reliable and secure communications in order to employ modern weaponry effectively. No individual or combination of signals methods met all three requirements in 1914-1918; but then fortunately neither did the enemy's.

Bob Evans

A Trench Wireless Set. © IWM Q7230

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[1] All Footnotes

38. The Commonwealth War Graves Commission

Origins

The Imperial War Graves Commission was created by Royal Charter in 1917, with a remit to 'make fit provision' for the burial of the dead of the Empire in the Great War, for the maintenance of the cemeteries and memorials and to acquire land for this purpose. The Commission was also to maintain the relevant records. The origins of the Commission lie in the work of Fabian Ware, an officer serving in an ambulance unit in France in 1914, who initiated a programme of grave registration. Given the scale of losses, particularly after the Somme offensive of 1916, this task became vast and led to the establishment of the Commission. In 1917, the war was still being fought and Ware's teams were obviously unable to get access to graves in enemy territory: this was particularly evident at Gallipoli.

The Commission's Work following the First World War

After the war, with 1.1 million Empire dead, the Commission began to acquire land and to build cemeteries. The 'great and good' of the era stepped forward to work with Ware: Kipling; the horticulturist Gertrude Jekyll; the architects Lutyens, Blomfield, Baker, Lorimer and Truelove. In a report written in 1917, Sir Frederic Kenyon, of the British Museum, had set out the essential features of the design of the cemeteries. This established the equality of treatment (i.e. identical headstones, irrespective of rank), the design of the headstones and that they should be in rows, of a uniform height and with a flat surface. On the advice of Lutyens, Kenyon recommended the erection of two 'central monuments' in each site: a 'great altar' (the Stone of Remembrance) and a Christian Cross (the Cross of Sacrifice): Kenyon highlighted that Jewish soldiers should be commemorated with a Star of David and that Hindu and Muslim soldiers should be buried in accordance with their religious beliefs. Generally, a Cross of Sacrifice was installed in cemeteries with over 250 soldiers: there is a smaller version for 40-250 soldiers and a much larger version for sites in excess of 2,000 soldiers. Horticulture design, contrary to myth, was not of an 'English country garden'. Rather, Kenyon recommended 'the restfulness of grass and the brightness of flowers'.

There was heated debate in Parliament on whether the dead should be returned to the United Kingdom, whether private memorials should be allowed (for those who could afford it) and whether distinctions should be made for officers. Some of the key principles were agreed at this time: the men would be buried where they fell and no distinction would be made between general and private – their headstones would lie side by side.

The bodies of 527,000 men were never identified, partly resulting from the effects of artillery, but also – as in Gallipoli – due to the fact that the Commission did not get access to the sites for years after the event. Of this total, 187,000 unidentified bodies were buried: it was Kipling who came up with the line 'a soldier of the Great War, known unto God'. The names of the missing were recorded, on stone panels, on the massive monuments at the Somme (the Thiepval Memorial), at Ypres (the Menin Gate), at Villers-Bretonneux, at Delville Wood and at Vimy Ridge. Memorials to the missing were also created at Dojran (Salonica), Helles (Gallipoli) and Mt. Scopus (Jerusalem). The naval dead were commemorated at memorials at Plymouth, Chatham and Portsmouth. At the dedication cemetery for the Menin Gate on 24 July 1927, Field-Marshal Plumer declared: 'They are not missing, they are here'. The words – again – were Kipling's.

Churchill, in Parliament, had some years before summed up the overall policy inimitably:

> There is no reason at all why, in periods as remote from our own as we ourselves are from the Tudors, the graveyards in France of this Great War shall not remain an abiding and supreme memorial to the efforts and the glory of the British Army.[1]

The coming of the Second World War resulted in many of the Commission's sites in Europe being abandoned, although hardly any were damaged.

After the Second World War

In 1946, the process was repeated, with the commemoration of a further 580,000 war dead from the Empire. New cemeteries were constructed in Normandy, in Italy, in

[1] House of Commons, 4 May 1920.

North Africa, Burma and Singapore. Post war, the emergence of the Iron Curtain denied the Commission access to its sites in the USSR and in China. The last decade, however, has seen a reopening of a number of sites such as Archangel, Murmansk and Vladivostok, whilst planning has started for Batum and Baku.

In 1964, The Imperial War Graves Commission became the Commonwealth War Graves Commission.

The Iran-Iraq war saw the Commission's large sites in the Basra area razed to the ground, whilst sites in Baghdad were abandoned. Since 2011, the Commission has established good links with local governors and sites in Basra, Baghdad and Kut are now in the process of being rebuilt. Similarly, the Commission's sites in Benghazi were attacked in 2011 by extremists: they, too, have now been rebuilt. At the time of writing, the Commission is unable to access its sites in Iran, in Syria and in Gaza.

The Commission Today

Today, the Commission has its head office in Maidenhead, Berkshire, with principal offices in Arras, Ypres, Larnaca and Delhi. The Commission has 1,200 staff worldwide and an annual operating budget of £70m, which is funded, proportionately, by the Governments of the United Kingdom, Canada, Australia, New Zealand, India and South Africa. With the centenary of the Great War and the 70th anniversaries of the key Second World War battles, the Commission continues to evolve, keeping true to the founding principles, whilst engaging with new generations who want to understand.

Colin Kerr

An early Cross of Sacrifice under construction. © CWGC

Acknowledgements

As editor, I must first thank the authors of this Guide, detailed in the List of Contributors. Most individuals are either former colleagues in the Ministry of Defence and the British Army, or are fellow members of the British Commission for Military History. Many are both. Without their expertise and experience, and not least their time and effort freely given, this volume could not have been produced. I am particularly grateful too to Lord Astor of Hever, with whom I shared a fascinating day touring the Ypres Salient in July 2014, for his Preface; and to Professor Sir Hew Strachan, not only for his Foreword, but also for his wise counsel throughout the whole project. I thank especially Mrs Barbara Taylor and Mr Martin Smithson of the Defence Geographic Centre, Feltham, who have drawn the excellent sketch maps that accompany the battlefield descriptions. Michael Orr has assisted in providing historical details for the maps. Barbara Taylor has also sourced many of the photographs, and assisted me throughout. Mike St. Maur Sheil has contributed two photographs from his 'Fields of Battle' exhibition. Both the Imperial War Museum and the National Army Museum have provided a series of images, for which many thanks. David Rowlands has kindly provided two artist's impressions.

I thank particularly Mr Stephen Shortall of the Army Design Studio, Army Headquarters, Andover, for his work in designing the cover and overall layout, and in integrating the text, maps and pictures to such good effect. Many people have assisted in the editing process: I owe a great debt of thanks to my consulting editors, Professors Stephen Badsey and Gary Sheffield of Wolverhampton University, and Professors Brian Holden Reid and William Philpott of the Department of War Studies, King's College London. They have all provided welcome guidance and suggested a series of constructive amendments to authors' drafts. Dr Jonathan Krause, Mr Charles Messenger, Mr Ian Passingham and Mr Charles Dick have also very kindly commented on a number of chapters. That said, while historical opinions will always vary, I remain responsible for any errors of fact in this volume. I would be grateful for notification of any corrections.

This Battlefield Guide would not have been possible without the direction of the Army's senior leadership, whose members have remained steadfast in their support of the project as its scope and costs expanded, and while deadlines stretched. General Sir Peter Wall, Chief of the General Staff and his successor, General Sir Nick Carter, have encouraged me throughout, as have Major Generals James Cowan and Edward Smyth-Osbourne, General Officers Commanding the 3rd (United Kingdom) Division and London District respectively. At Army Headquarters, Lieutenant Colonel David Luck and Major Mike Mahoney have helped steer the volume from inception to publication.

I trust that the Guide will help not only to inform its readers of the major battles fought on the Western Front by the British army and its allies, but also encourage them to study the battlefields at close hand. While much can be learnt by reading from the immense literature of the First World War, and by discussing the conflict in the seminar room, it remains indispensible in my view to 'walk the ground', not only to visit the cemeteries and to inspect the memorials, but also to observe the lie of the land, to learn of the ebb and flow of battle and to capture the spirit of the places where so many hundreds of thousands gave their lives for causes they believed in. It is fitting, therefore, to conclude by quoting from the late Richard Holmes, who wrote of the Western Front's 'ineluctable poignancy. … Every time I see it I am amazed afresh at what our grandfathers and great-grandfathers were asked to do: and how well they did it'.[1]

Note on the Second Edition

It has been a great pleasure to edit this second edition of Volume 1 of the Army First World War Battlefield Guide. As with the first edition, many people have assisted its preparation and production. In addition to the new chapter authors, I would like to thank in particular: Barbara Taylor once again for her series of fine maps; Colonel John Wilson, Professors Stephen Badsey, William Philpott and Gary Sheffield, Charles Dick and Charles Messenger for their advice; Lieutenant Colonel Matthew ('Sticky') Whitchurch, Directorate of Land Warfare, for his support; and not least to Annemarie Seager, head of Creative Media Design, who has designed this edition with great dedication. Finally, I would like to thank Frank Baldwin, Julia Gavin, Spencer Jones and, especially, Mike St. Maur Sheil for providing additional images at a very late stage in the production of this volume.

Mungo Melvin

[1] Richard Holmes, *The Western Front* (London: BBC Books, 1999) p. 18.

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Colin Kerr is the Director of Finance for the Commonwealth War Graves Commission; he is also its lead director for the 1914-18 Centenary (including the major Second World War events). A Scottish chartered accountant, he joined the Commission in 2011 after a successful career as a finance director in both the commercial and public sectors. An amateur naval historian, he and his family live near Bath.

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Dr Edward Madigan is a Lecturer in Public History and First World War Studies at Royal Holloway, University of London. He is a former resident historian at the Commonwealth War Graves Commission and his publications include *Faith Under Fire: Anglican Army Chaplains and the Great War* (2011) and, with John Horne, *Towards Commemoration: Ireland in War and Revolution, 1912-1923* (2013).

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Lieutenant Colonel Alistair McCluskey was commissioned into The Queen's Lancashire Regiment in 1990 and transferred into the Royal Army Medical Corps in 1996. He has served on operations in Northern Ireland, Bosnia and Afghanistan. He gained his MA in War Studies from King's College London. He authored the Osprey Campaign volume on Amiens 1918. He has a deep interest in all aspects of the First World War.

Major General Mungo Melvin* CB OBE MA retired from the British Army in 2011, having served in the Royal Engineers and in the General Staff. He is President of the British Commission for Military History, a senior visiting research fellow at King's College London and senior associate fellow at RUSI. He authored *Manstein: Hitler's Greatest General* (2010) and is writing *Sevastopol: Crimea's Wars from Potemkin to Putin*, due to be published in 2016. He lectures widely on military strategy and high command.

Charles Messenger* served for twenty years as a Regular officer and thirteen as a Territorial in the Royal Tank Regiment. He is the author of over forty books on military history and defence matters. His titles include *Call to Arms: The British Army 1914-18* (2005) and *The Day We Won the War: Turning Point at Amiens, 8 August 1918* (2008). He is currently working on Volume 4 of his Regiment's History, which will be published in 2017.

Michael Orr* lectured in War Studies at the Royal Military Academy Sandhurst (RMAS) from 1969 to 1984. He was subsequently a Senior Lecturer in Soviet Studies/Conflict Studies Research Centre based at the RMAS until 2005. He was Secretary General of the British Commission for Military History from 2005 to 2010.

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Lieutenant Colonel Jeremy Pughe-Morgan was commissioned into the Royal Regiment of Wales in 1986. He has served on operations in Northern Ireland, Bosnia, Iraq and Afghanistan. He has attended the Advanced Command and Staff Course, has an MA in Military Studies, co-authored the Army Field Manual on Counterinsurgency and has a deep interest in Twentieth Century warfare.

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Barbara Taylor* is employed at the Defence Geographic Centre and is the lead cartographer for the Army Battlefield Guide of the First World War. A career draughtswoman and First World War expert in her own right, she is a long standing member of the Western Front Association and is now chairman of Thames Valley Branch; she is also a member of the Battlefields Trust. Her maps in military histories, many written by fellow BCMH members, have been critically acclaimed.

Major General (ret.) David T. Zabecki* earned his doctorate from the Royal Military College of Science, Shrivenham, Cranfield University. He enlisted in the U.S. Army in 1966 and served in Vietnam as an infantry rifleman. His last major assignment was command of the U.S. Southern European Task Force (Rear). He is an Honorary Senior Research Fellow in the University of Birmingham's War Studies Programme; in 2012 he held the Dr. Leo A. Shiffren Distinguished Chair in Military History at the U.S. Naval Academy, Annapolis.

Bibliography

Bibliography

This Bibliography lists the works cited in the 'Further Reading' sections of the Guide. It represents but a very small fraction of a vast and fast-growing literature of the First World War. Further sources, multimedia links and reference materials are given in the associated Operation REFLECT DVD produced by the British Army's Directorate of Land Warfare.

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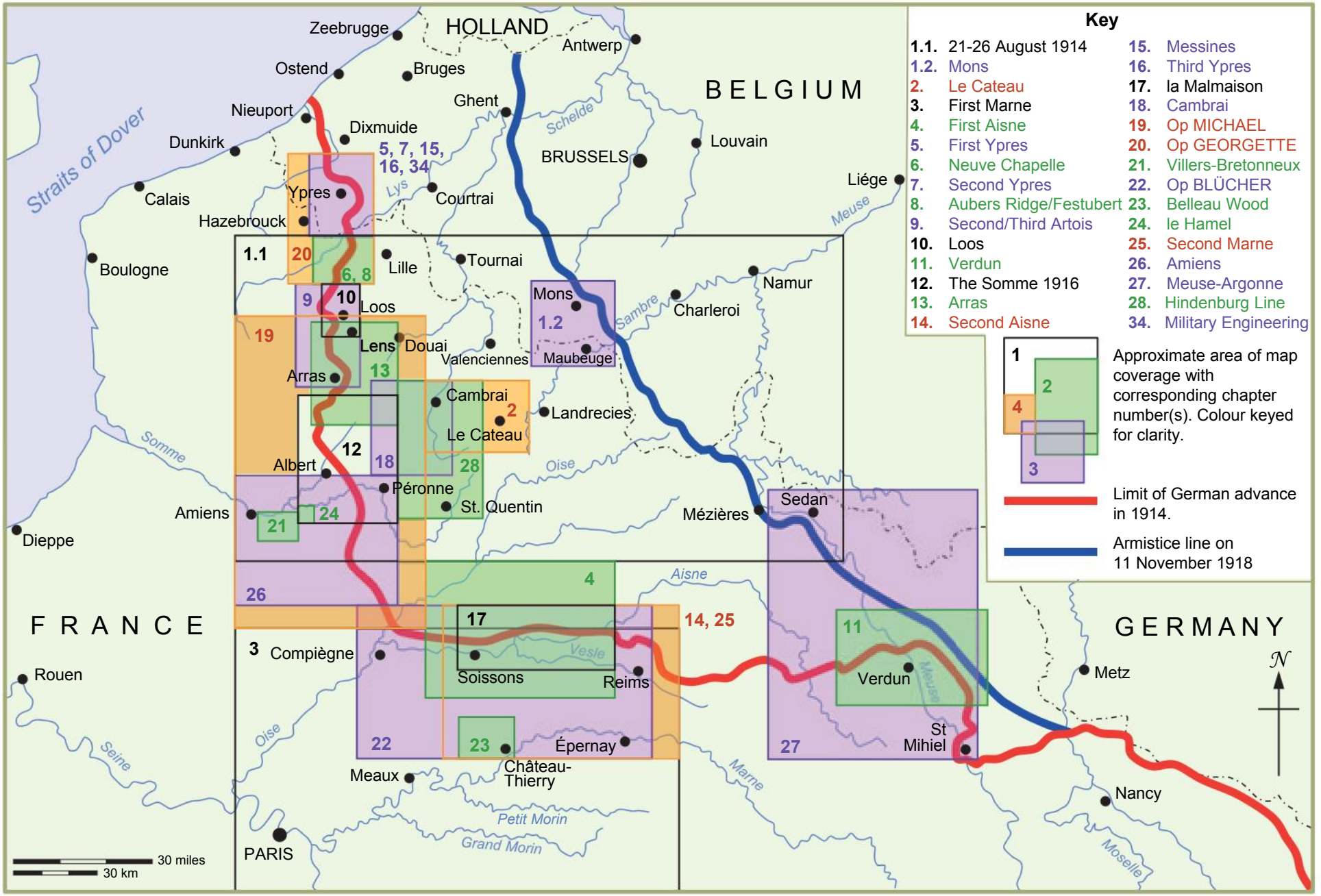
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Lille
Tournai
BRUSSELS
Louvain
Liége
Namur
Charleroi
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Maubeuge
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Le Cateau
Landrecies
Albert
Péronne
St. Quentin
Amiens
Dieppe
Rouen
Compiègne
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Reims
Sedan
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1.2. Mons
2. Le Cateau
3. First Marne
4. First Aisne
5. First Ypres
6. Neuve Chapelle
7. Second Ypres
8. Aubers Ridge/Festubert
9. Second/Third Artois
10. Loos
11. Verdun
12. The Somme 1916
13. Arras
14. Second Aisne
15. Messines
16. Third Ypres
17. la Malmaison
18. Cambrai
19. Op MICHAEL
20. Op GEORGETTE
21. Villers-Bretonneux
22. Op BLÜCHER
23. Belleau Wood
24. le Hamel
25. Second Marne
26. Amiens
27. Meuse-Argonne
28. Hindenburg Line
34. Military Engineering
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Approximate area of map coverage with corresponding chapter number(s). Colour keyed for clarity.
Limit of German advance in 1914.
Armistice line on 11 November 1918

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